ORDER NO. ODSD020318A1

B12

Service Manual

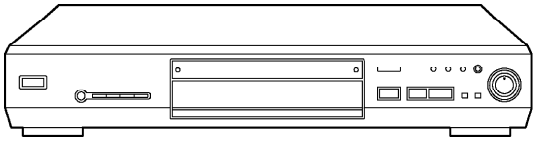
DVD Player

DVD-RV22PP

Colour

(K).....Black Type

Please use this manual together with the service manual for Model No.DVD-RV32P, Order No.ODSD020112C1.



SPECIFICATIONS

Specifications

Power supply:	**AC120 V, 60 Hz**
Power consumption:	**14 W**
Dimensions:	**430 (W)×247 (D)×74.5 (H) mm [1615/16”(W) x 912/16”(D) x 2 15/16” (H)] (excluding protrusions)**
Mass:	**2.4 kg (5.31 lb.)**
Signal system:	**NTSC**
Operating temperature range:	**+5 to +35°C (+41 to 95°F)**
Operating humidity range:	**5 to 90 % RH (no condensation)**
Region number:	**Region No.1**

Playable disctype:

(1) DVD-Video

DVD-R (DVD-Video compatible)

(2) CD-Audio (CD-DA)

(3) Video CD

(4) CD-R/CD-RW (CD-DA, Video CD formatted discs)

(5) MP3

- **Maximum number of tracks and groups recognizable: 999 tracks and 99 groups**
- **Compatible compression rate:between 32 kbps and 320 kbps**

Video output:	
Output level:	**1 Vp-p (75 Ω)**
Output terminal:	**Pin jack**
Number of terminals:	**1 systems**
S video output:	
Y output level:	**1 Vp-p (75 Ω)**
C output level:	**0.286 Vp-p (75 Ω)**
Output terminal:	**S terminal**
Number of terminals:	**1 system**
Component video output:	
Y output level:	**1 Vp-p (75 Ω)**
PB output lebel:	**0.7 Vp-p (75 Ω)**
PR output level	**0.7 Vp-p (75 Ω)**
Output terminal:	**Pin jack (Y:green, PB:blue, PR:red)**
Number of terminal:	**1 system**
Audio output:	
Output level:	**2 Vrms (1 kHz, 0 dB)**
Output terminal:	**Pin jack**
Number of terminals:	
2CH:	**1 system**
Subwoofer output (0.1 ch):	**1 system**

Audio signal output characteristics:

(1) Frequency response:

● DVD (linear audio):	**4 Hz-22 kHz (48 kHz sampling)**
	4 Hz-44 kHz (96 kHz sampling)

● CD audio:	4 Hz-20 kHz
(2) S/N ratio:	
● CD audio:	115 dB
(3) Dynamic range:	
● DVD (linear audio):	102 dB
● CD audio:	98 dB
(4) Total harmonic distortion:	
● CD audio:	0.0025 %
Digital audio output:	
Optical digital output:	Optical terminal
Pickup	
Wave length:	658 nm/790 nm
Laser power:	CLASS 2a/CLASS 1

Power consumption in standby mode:
approx. 2 W

Note:
Specifications are subject to change without notice.
Mass and dimensions are approximate.

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⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Panasonic

1. Replacement Parts List

Notes:
***Important safety notice:**
Components identified by ⚠ mark have special characteristics important for safety. / Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.
***When replacing any of components, be sure to use only manufactureris specified parts shown in the parts list.**
***Warning: This product uses a laser diode. Refer to caution statements.**
***ACHTUNG: Die lasereinheit nicht zerlegen. Die lasereinheit darf nur gegen enic vom hersteller spezifizierte einheit ausgetauscht werden.**
***Resistance values are in ohms, unless specified otherwise, 1K=1,000 (OHM), 1M=1,000k (OHM)**
***The marking (RTL) indicates that the retention time is limited for this item. After the discontinuation of this assembly in production, it will no longer be available.**
***All parts that are supplied by S.P.C..**

1.1. Change in Replacement Parts List

● **Mentioned in the parts list is only those different from Model No. DVD-RV32P**

Ref. No.	Change of Part NO.		Part Name & Description	Remarks
	DVD-RV32P	DVD-RV22PP		
CABINET AND CHASSIS				
7	REP3303C	REP3303T	MODULE P.C.B.	
8	REP3304C	REP3304N	MOTHER P.C.B.	
16	CYP0003-K	CYP0003-K2	FRONT PANEL ASS'Y 2	
19	RXQ0755	RXQ0755-2C	SHUTTLE BASE ASS'Y	
28	CGR0001A-A	CGR0001A-K	REAR PANEL	
106-1	RMG0558-K	RMGC0558-K	PCB RUBBER	
ACCESSORY				
A3	RJA0065-A	RJA0065-2D	AC CORD	
PACKAGING				
PC1	RPGC0017	RPGC0032	PACKING CASE	

Ref. No.	Change of Part NO.		Part Name & Description	Remarks
	DVD-RV32P	DVD-RV22PP		
CAPACITOR(S)				
C4001,02	EEVHB0J330R	----	6.3V 33U	Deletion
C4003-15	ECUX1C104ZFV	----	16V 0.1U	Deletion
C4021	ECUV0J105KBV	----	6.3V 1U	Deletion
C4022	ECUV1H103ZFV	----	50V 0.01U	Deletion
C4023	ECUV0J105KBV	----	6.3V 1U	Deletion
C4031	ECUX1C104ZFV	----	16V 0.1U	Deletion
C4041	ECUX1C104ZFV	----	16V 0.1U	Deletion
C4051	ECUX1C104ZFV	----	16V 0.1U	Deletion
C4061	ECUX1C104ZFV	----	16V 0.1U	Deletion
INTEGRATED CIRCUIT(S)				
IC4001	TMS320C5410A	----	IC	Deletion
IC4021	C0CBCAC00025	----	IC	Deletion
IC4031	C0JBAR000294	----	IC	Deletion
IC4041	AHC1G08HDCK	----	IC	Deletion
IC4051	AHC1G08HDCK	----	IC	Deletion
IC4061	AHC2G74HDCTR	----	IC	Deletion
RESISTOR(S)				
K4001-03	----	ERJ3GEY0R00V	1/16W 0	Addition
K4031	----	ERJ3GEY0R00V	1/16W 0	Addition
K4011,12	ERJ3GEY0R00V	----	1/16W 0	Deletion
K4022-26	ERJ3GEY0R00V	----	1/16W 0	Deletion
COIL(S)				
L3091	VLQ0855K100T	----	COIL 10UH	Deletion
LB3011	VLP0157-T	----	COIL	Deletion
RESISTOR(S)				
R2043,44	ERJ3GEYJ104V	----	1/16W 100K	Deletion
R4001,02	ERJ3GEYJ104V	----	1/16W 100K	Deletion
R4004	ERJ3GEYJ104V	----	1/16W 100K	Deletion
R4005,06	ERJ3GEY0R00V	----	1/16W 0	Deletion
R4009,10	ERJ3GEYJ103V	----	1/16W 10K	Deletion
R6024	ERJ3GEYJ122V	ERJ3GEYJ472V	1/16W 4.7K	

Ref. No.	Change of Part NO.		Part Name & Description	Remarks
	DVD-RV32P	DVD-RV22PP		
R6026	ERJ3GEYJ272V	ERJ3GEYJ472V	1/16W 4.7K	
RESISTOR-RESISTOR				
RA4001	EXBV4V473JV	----	RESISTOR-RESISITOR	Deletion
RA4002	EXBV8V104JV	----	RESISTOR-RESISITOR	Deletion
RA4003	EXBV4VR000V	----	RESISTOR-RESISITOR	Deletion
RA4004	EXBV8VR000V	----	RESISTOR-RESISITOR	Deletion
RA4005,06	EXBV4VR000V	----	RESISTOR-RESISITOR	Deletion

2. SCHEMATIC DIAGRAM

2.1. AVDEC SECTION (MODULE P.C.B. (2/6)) SCHEMATIC DIAGRAM

2.2. AUDIO-DAC SECTION (MODULE P.C.B. (4/6)) SCHEMATIC DIAGRAM

2.3. CPU SECTION (MODULE P.C.B. (6/6)) SCHEMATIC DIAGRAM

3. PRINT CIRCUIT BOARD

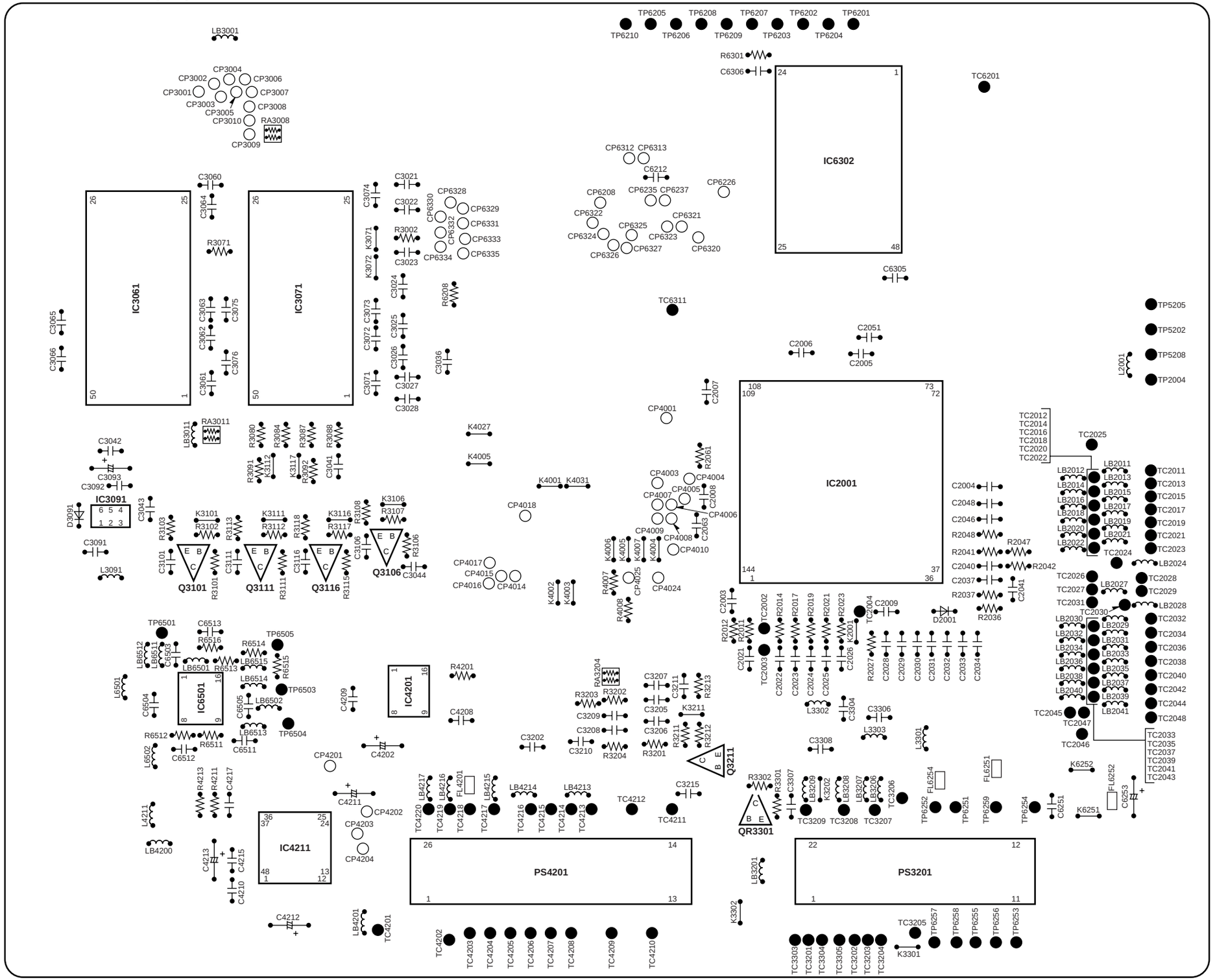
3.1. MODULE P.C.B. (1/2) (COMPONENT SIDE)

3.2. MODULE P.C.B. (2/2) (FOIL SIDE)

4. Schematic Diagram for printing with A4

H020300000 HP

MODULE P.C.B. (2/2)

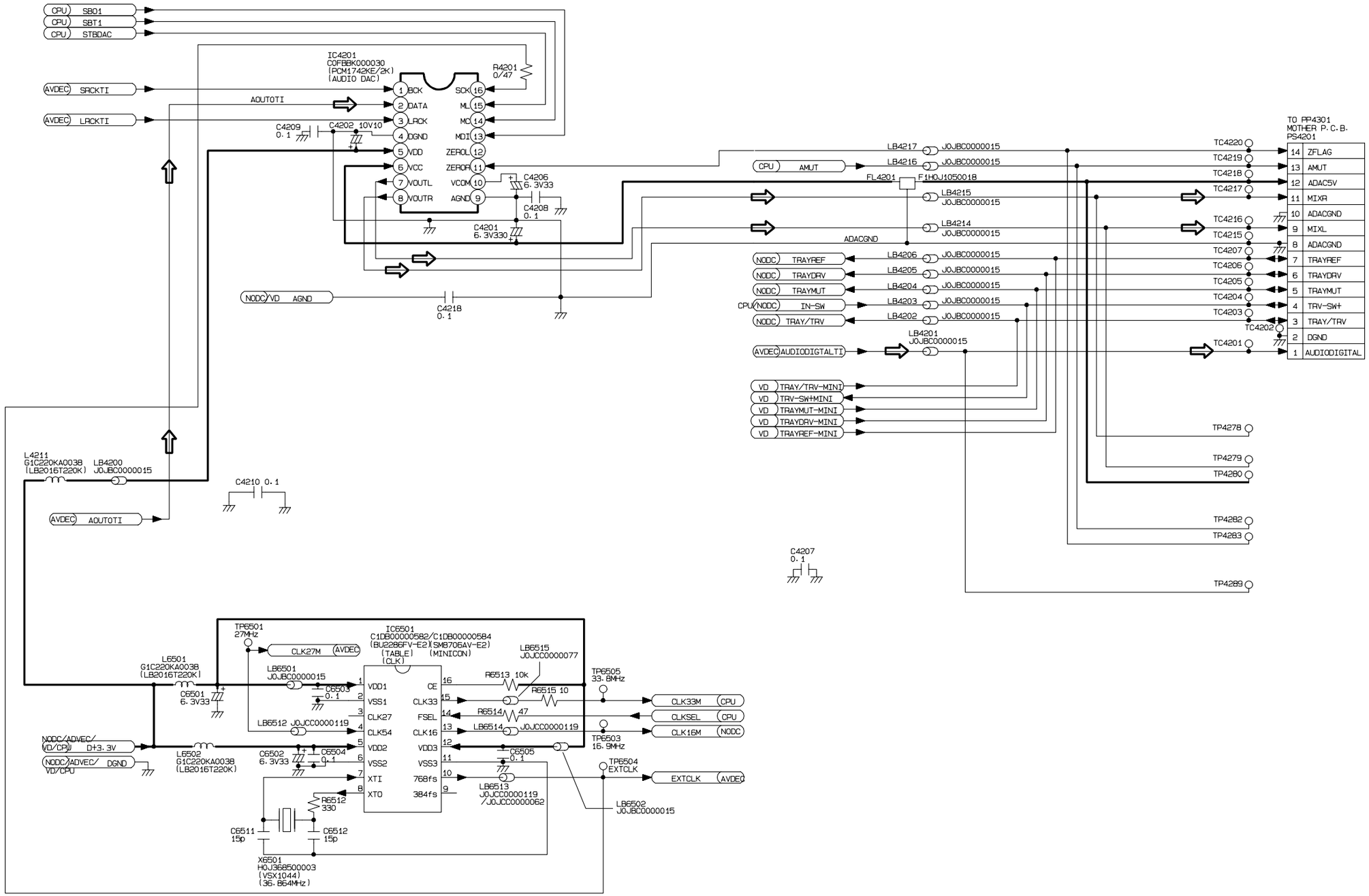


(FOIL SIDE)

DVD-RV22PP
MODULE P.C.B.
REP3303T

PO SECTION:Page A VO SECTION:Page B AO SECTION:Page C
OP SECTION:Page D NODC SECTION:Page E AVDEC SECTION:Page F
VD SECTION:Page G AD SECTION:Page H CPU SECTION:Page J

AUDIO SIGNAL PATH H



NOTE:DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERRING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST. AND MAY BE SLIGHTLY DIFFERNT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

DVD-RV22PP
AUDIO-DAC SECTION
(MODULE P.C.B.(4/6))
SCHEMATIC DIAGRAM

F

VIDEO SIGNAL PATH

AUDIO SIGNAL PATH

PO SECTION:Page A VO SECTION:Page B AO SECTION:Page C
OP SECTION:Page D NODC SECTION:Page E AVDEC SECTION:Page F
VD SECTION:Page G AD SECTION:Page H CPU SECTION:Page J

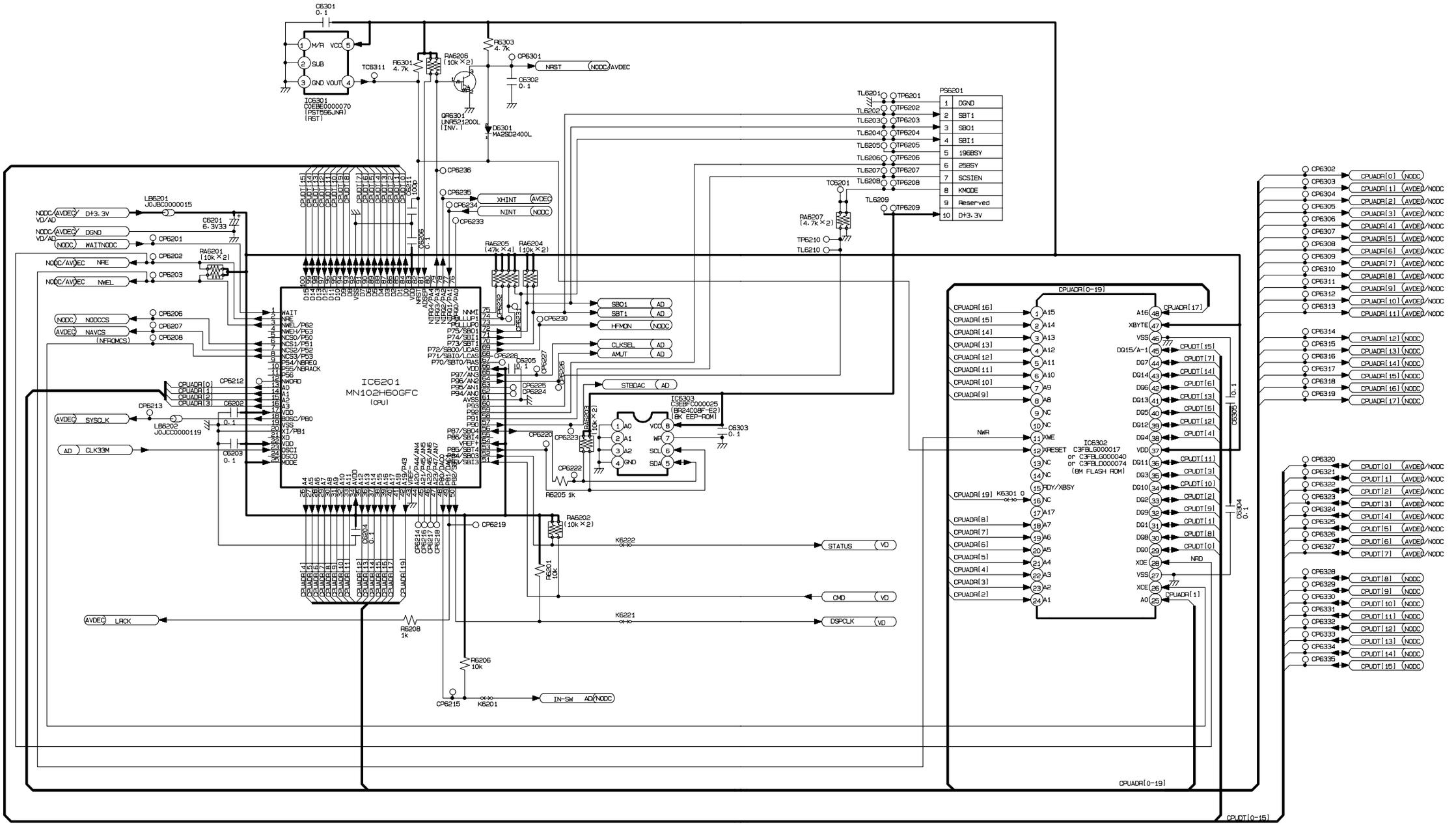
IC3001
MN677533MP
(AVDEC)

IC3051
C3ABMG000103
(MSM56V16160F-BTK-FM)
(16M SDRAM)
or C3ABMG000092 or C3ABMG000084 or C3ABMG000096 or C3ABMG000093 or C3ABMG000108
(K4S161622D-TC60)(K4S161622D-TC80)(LG3816161ET-70-MPB)(HY57V161610DTC-7)(NT56V16516 A0T-7)

NOTE:DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST, AND MAY BE SLIGHTLY DIFFERNT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

DVD-RV22PP
AVDEC SECTION
(MODULE P.C.B.(2/6))
SCHEMATIC DIAGRAM

PO SECTION:Page A VO SECTION:Page B AO SECTION:Page C
OP SECTION:Page D NODC SECTION:Page E AVDEC SECTION:Page F
VD SECTION:Page G AD SECTION:Page H CPU SECTION:Page J



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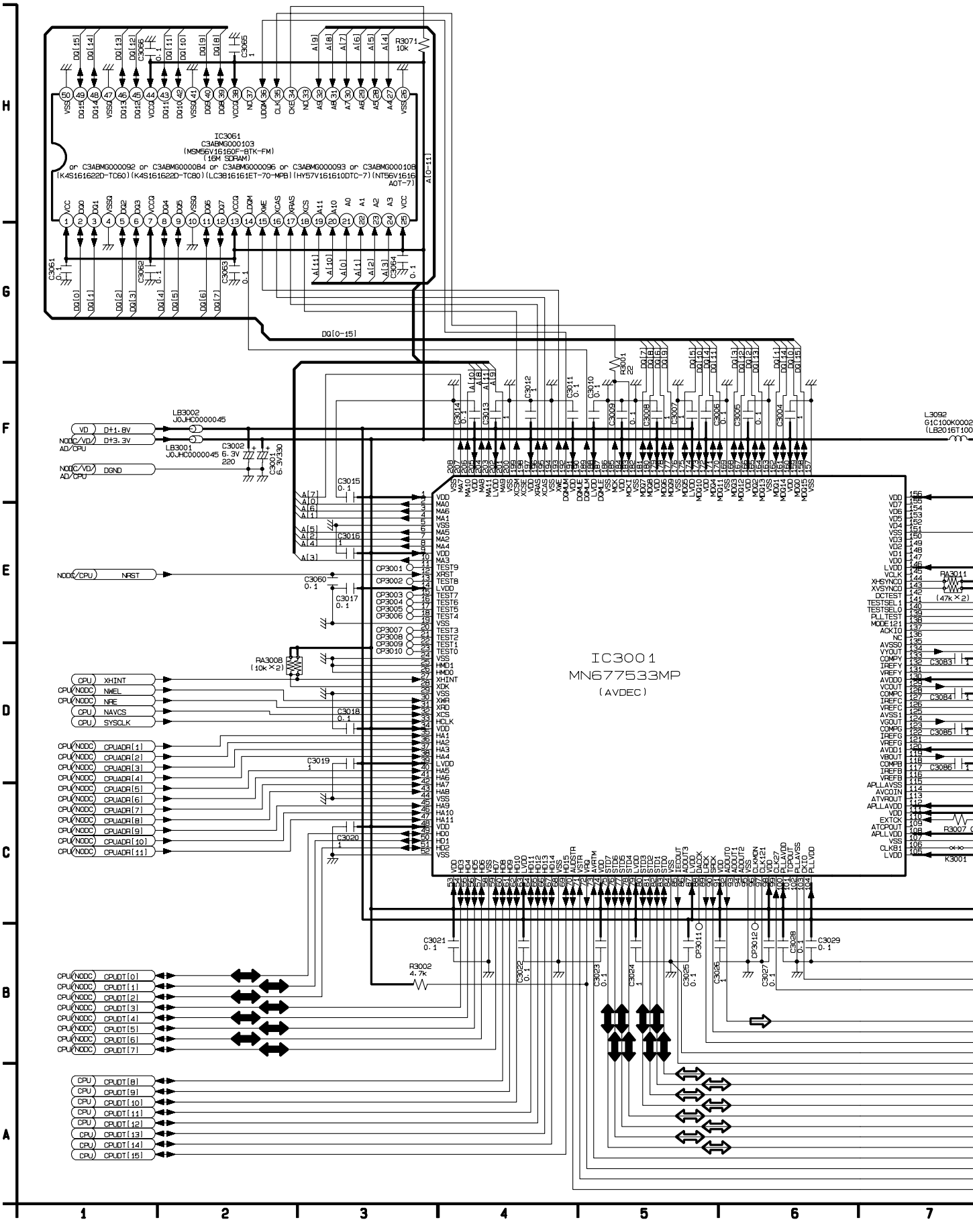
DVD-RV22PP
CPU SECTION
(MODULE P.C.B.(6/6))
SCHEMATIC DIAGRAM

2 SCHEMATIC DIAGRAM

2.1. AVDEC SECTION (MODULE P.C.B. (2/6)) SCHEMATIC DIAGRAM

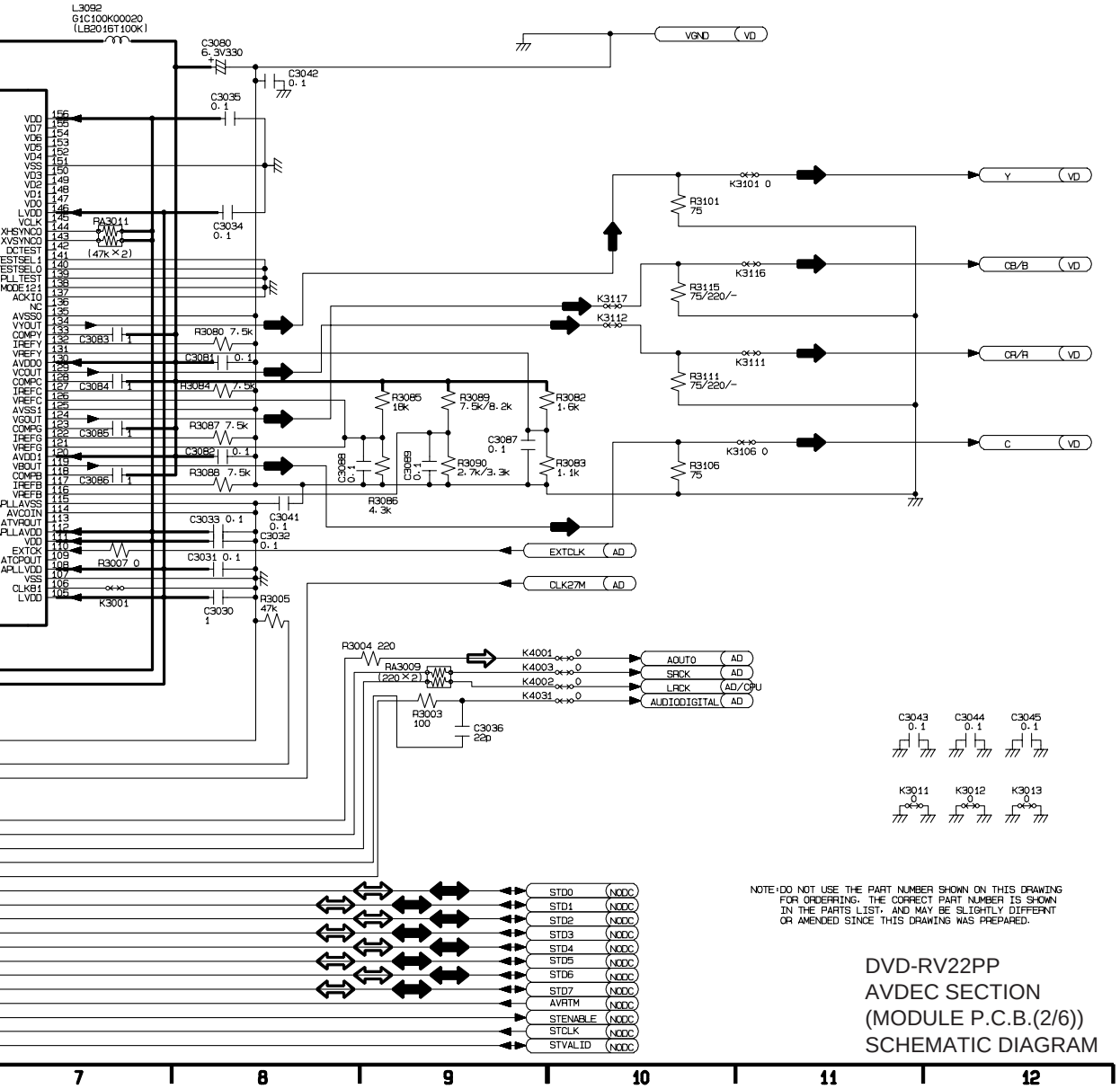


F

VIDEO SIGNAL PATH

AUDIO SIGNAL PATH

PO SECTION:Page A VO SECTION:Page B AO SECTION:Page C
OP SECTION:Page D NODC SECTION:Page E AVDEC SECTION:Page F
VD SECTION:Page G AD SECTION:Page H CPU SECTION:Page J



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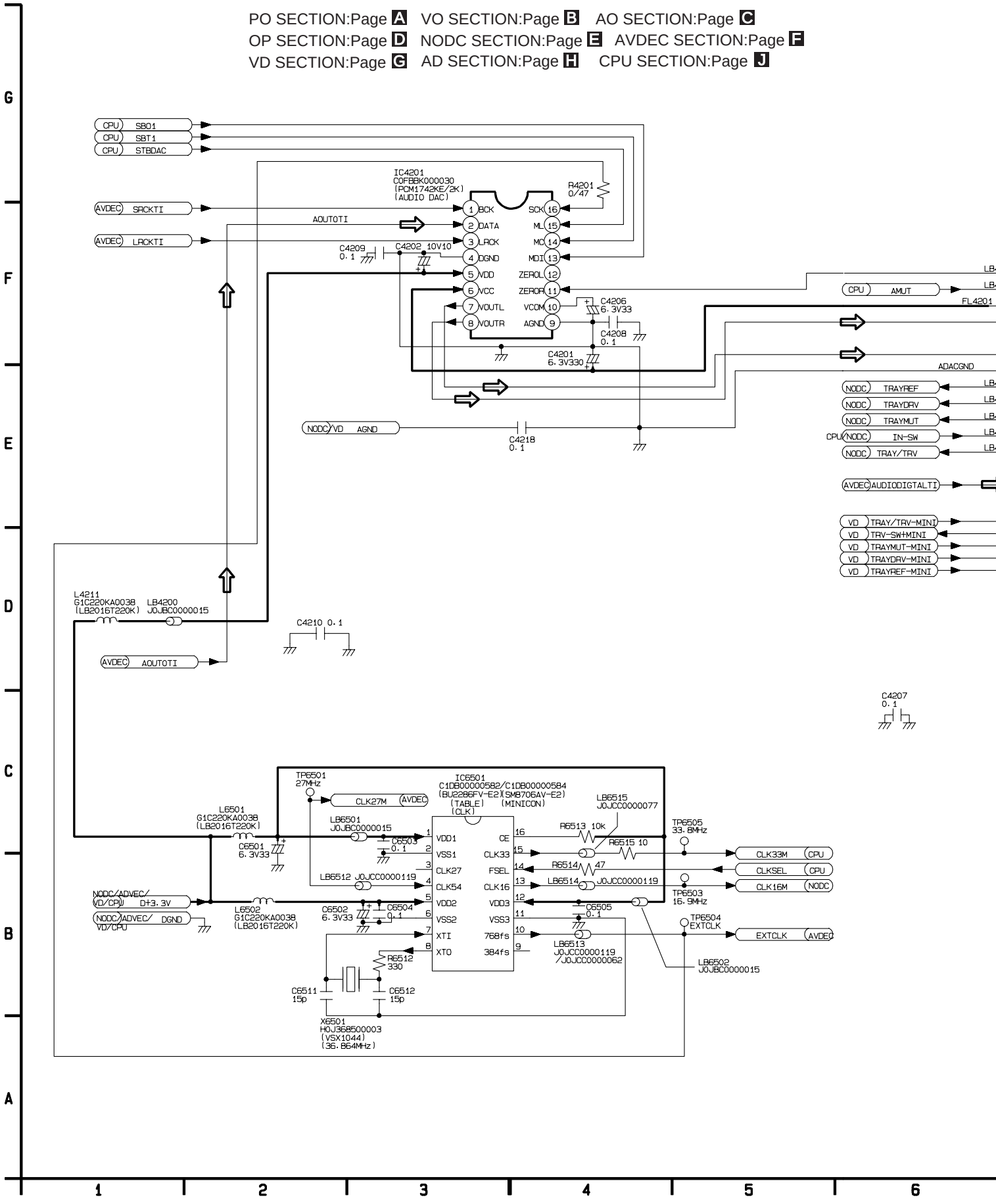
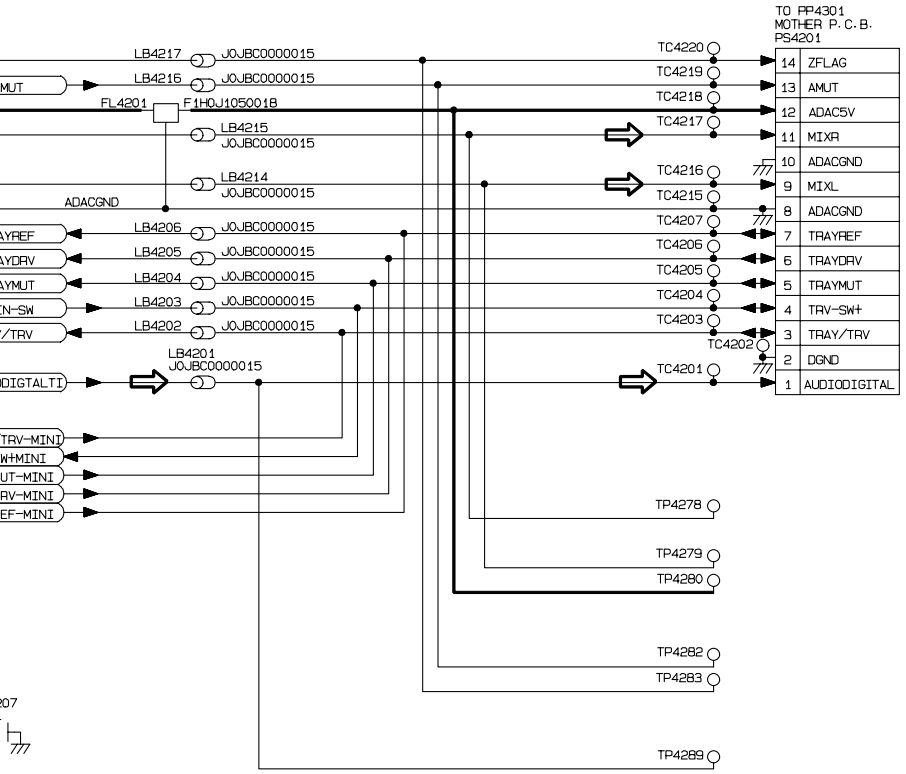
DVD-RV22PP
AVDEC SECTION
(MODULE P.C.B.(2/6))
SCHEMATIC DIAGRAM

2.2. AUDIO-DAC SECTION (MODULE P.C.B. (4/6)) SCHEMATIC DIAGRAM

PO SECTION:Page A VO SECTION:Page B AO SECTION:Page C
OP SECTION:Page D NODC SECTION:Page E AVDEC SECTION:Page F
VD SECTION:Page G AD SECTION:Page H CPU SECTION:Page J



AUDIO SIGNAL PATH



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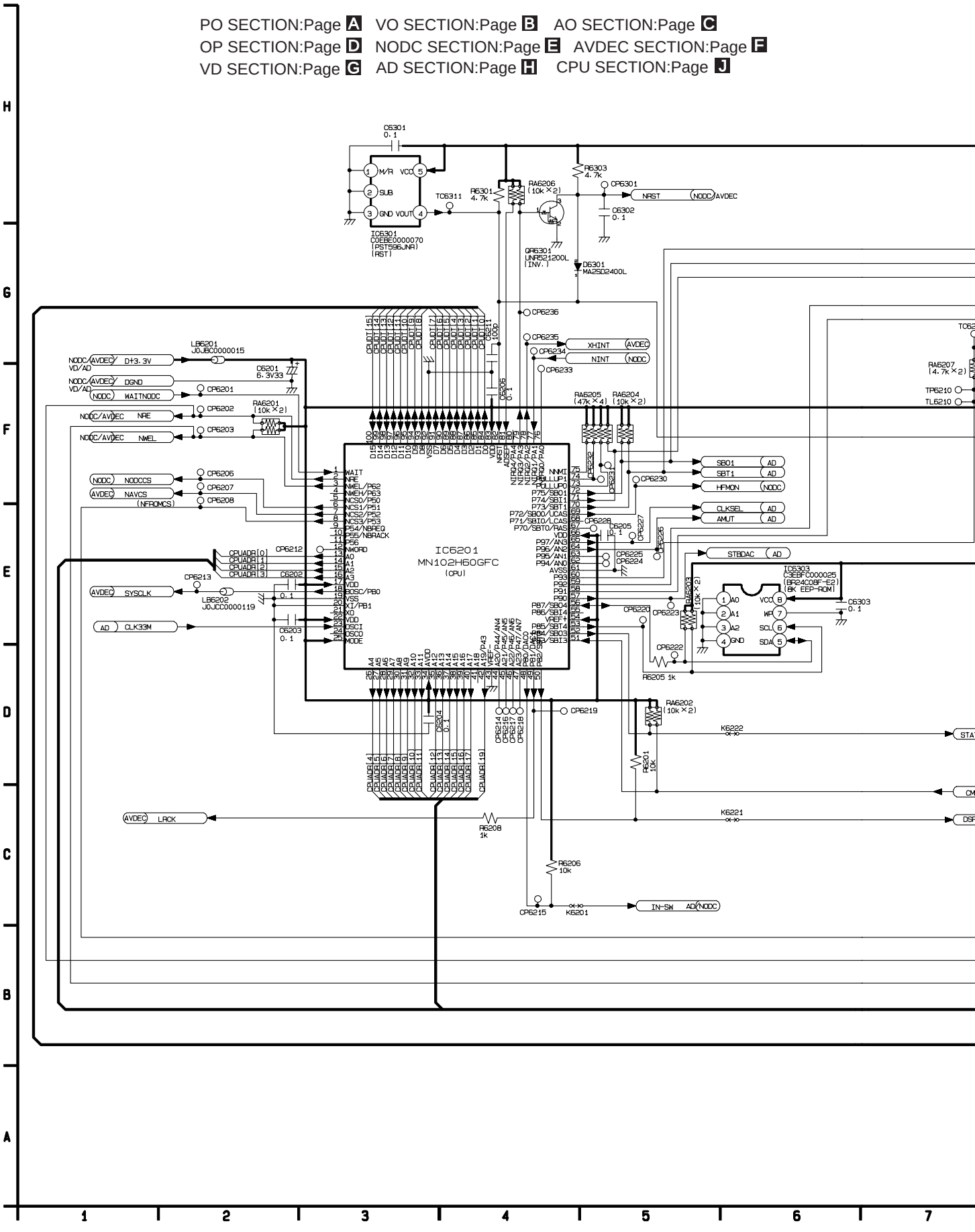
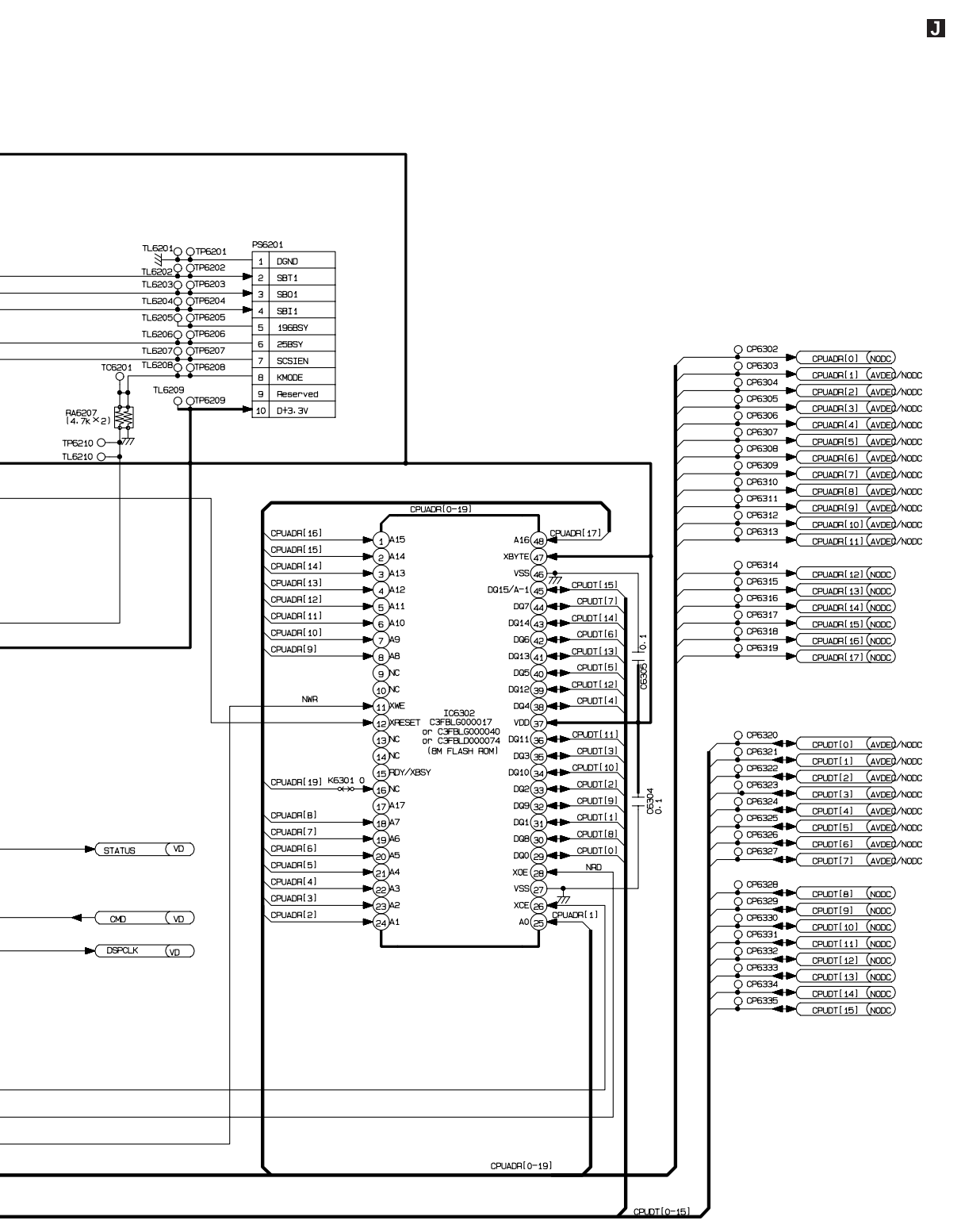
DVD-RV22PP
AUDIO-DAC SECTION
(MODULE P.C.B.(4/6))
SCHEMATIC DIAGRAM

6 7 8 9 10

2.3. CPU SECTION (MODULE P.C.B. (6/6)) SCHEMATIC DIAGRAM

PO SECTION:Page A VO SECTION:Page B AO SECTION:Page C
OP SECTION:Page D NODC SECTION:Page E AVDEC SECTION:Page F
VD SECTION:Page G AD SECTION:Page H CPU SECTION:Page J





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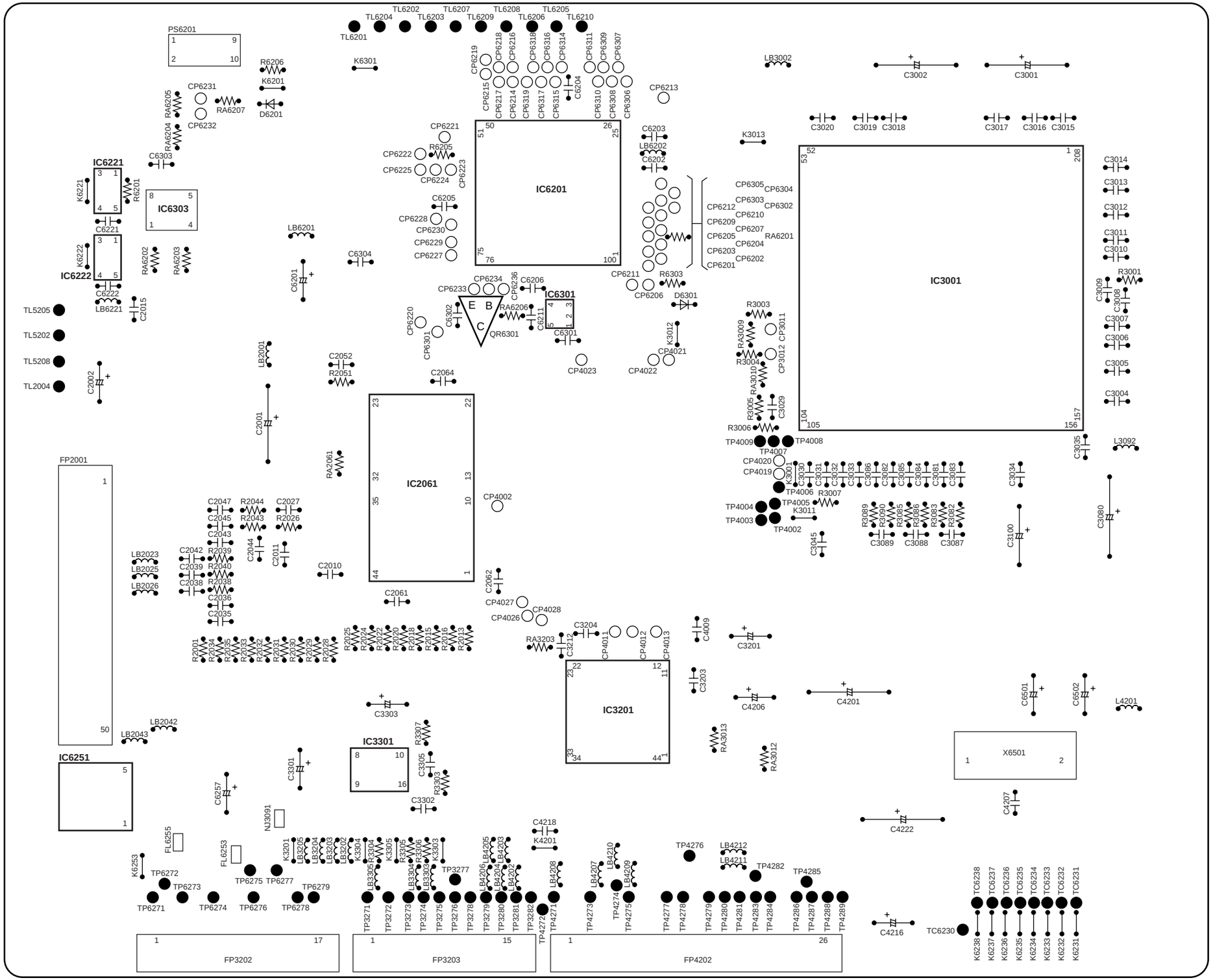
DVD-RV22PP
CPU SECTION
(MODULE P.C.B.(6/6))
SCHEMATIC DIAGRAM

7 8 9 10 11 12

MODULE P.C.B. (1/2)



(COMPONENT SIDE)

DVD-RV22PP
MODULE P.C.B.
REP3303T

ORDER NO.ODSD020112C1

B12

Service Manual

DVD Player

DVD-RV32P-CHINA-PRODUCT / DVD-RV32PC-CHINA-PRODUCT

Colour

(K).....Black Type

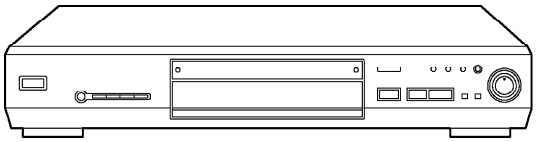
(S).....Silver Type

Note:

DVD-RV32 has Japanese production and the China production.

A part for China production is carried to this Service Manual.

Please refer to “1. FOR DISTINCTION OF PRODUCT FACTORY.”



SPECIFICATIONS

Specifications

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Signal system:	**NTSC**
Operating temperature range:	**+5 to +35°C (+41 to 95°F)**
Operating humidity range:	**5 to 90 % RH (no condensation)**
Region number:	**Region No.1**

Playable disctype:

(1) DVD-Video

DVD-R (DVD-Video compatible)

(2) CD-Audio (CD-DA)

(3) Video CD

(4) CD-R/CD-RW (CD-DA, Video CD formatted discs)

(5) MP3

- **Maximum number of tracks and groups recognizable: 999 tracks and 99 groups**
- **Compatible compression rate:between 32 kbps and 320 kbps**

(6) WMA

Video output:	
Output level:	**1 Vp-p (75 Ω)**
Output terminal:	**Pin jack**
Number of terminals:	**1 systems**
S video output:	
Y output level:	**1 Vp-p (75 Ω)**
C output level:	**0.286 Vp-p (75 Ω)**
Output terminal:	**S terminal**
Number of terminals:	**1 system**
Component video output:	
Y output level:	**1 Vp-p (75 Ω)**
PB output lebel:	**0.7 Vp-p (75 Ω)**
PR output level	**0.7 Vp-p (75 Ω)**
Output terminal:	**Pin jack (Y:green, PB :blue, PR :red)**
Number of terminal:	**1 system**
Audio output:	
Output level:	**2 Vrms (1 kHz, 0 dB)**
Output terminal:	**Pin jack**
Number of terminals:	
2CH:	**1 system**
5CH discrete output (5.1 ch):	**1 system**

Audio signal output characteristics:

(1) Frequency response:

- **DVD (linear audio):** 4 Hz-22 kHz (48 kHz sampling)
  4 Hz-44 kHz (96 kHz sampling)
- **CD audio:** 4 Hz-20 kHz

(2) S/N ratio:

- **CD audio:** 115 dB

(3) Dynamic range:

- **DVD (linear audio):** 102 dB
- **CD audio:** 98 dB

(4) Total harmonic distortion:

- **CD audio:** 0.0025 %

Digital audio output:

Optical digital output: Optical terminal

Pickup

Wave length: 658 nm/790 nm

Laser power: CLASS 2a/CLASS 1

Power consumption in standby mode:

approx. 2 W

Note:

Specifications are subject to change without notice.

Mass and dimensions are approximate.

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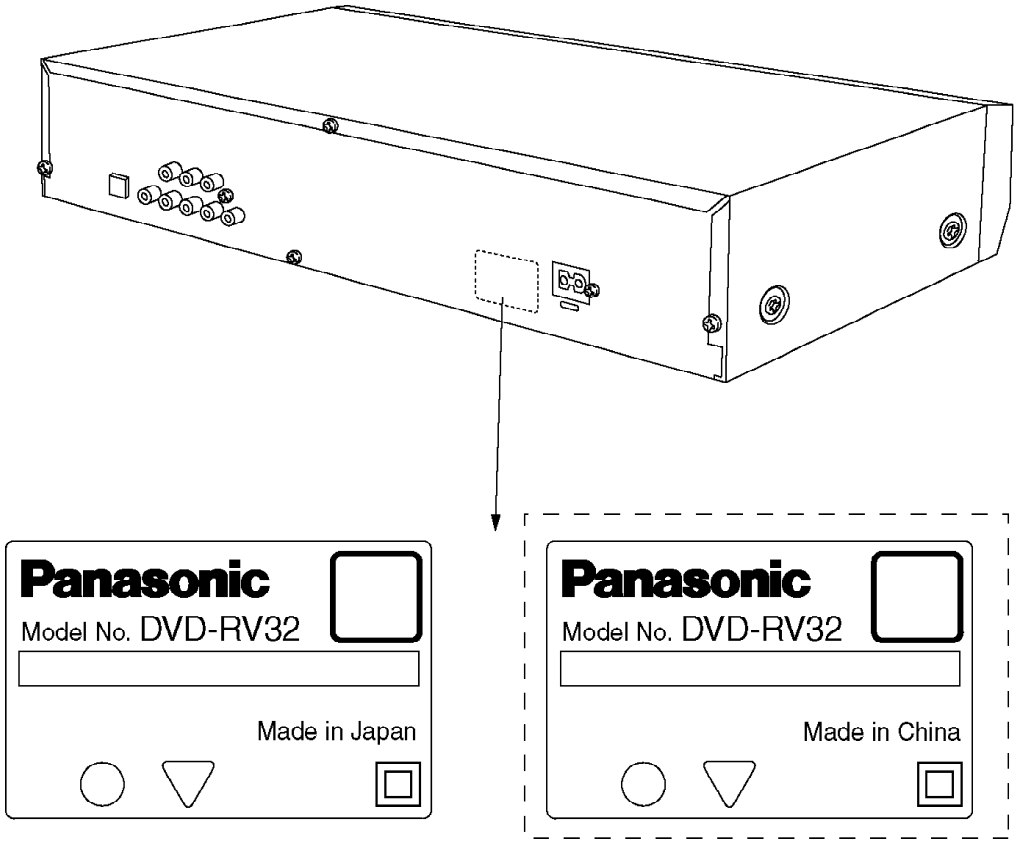
⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Panasonic

1. FOR DISTINCTION OF PRODUCT FACTORY

How to make a distinction between Japan product and China product is shown in name plate of rear panel.



2. SAFETY PRECAUTIONS

2.1. GENERAL GUIDELINES

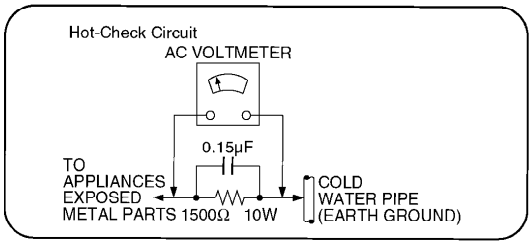
1. When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
2. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.
3. After servicing, make the following leakage current checks to prevent the customer from being exposed to shock hazards.

2.1.1. LEAKAGE CURRENT COLD CHECK

1. Unplug the AC cord and connect a jumper between the two prongs on the plug.
2. Measure the resistance value, with an ohmmeter, between the jumpered AC plug and each exposed metallic cabinet part on the equipment such as screwheads, connectors, control shafts, etc.

When the exposed metallic part has a return path to thechassis, the reading should be between 1M Ω and 5.2M Ω . / When the exposed metal does not have a return path to the chassis, the reading must be ∞.

Figure 1



2.1.2. LEAKAGE CURRENT HOT CHECK (See Figure 1 .)

1. **Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.**
2. **Connect a 1.5k Ω , 10 watts resistor, in parallel with a 0.15 µ F capacitors, between each exposed metallic part on the set and a good earth ground such as a water pipe, as shown in Figure 1 .**
3. **Use an AC voltmeter, with 1000 ohms/volt or more sensitivity, to measure the potential across the resistor.**
4. **Check each exposed metallic part, and measure the voltage at each point.**
5. **Reverse the AC plug in the AC outlet and repeat each of the above measurements.**
6. **The potential at any point should not exceed 0.75 volts RMS. A leakage current tester (Simpson Model 229 or equivalent) may be used to make the hot checks, leakage current mu3st not exceed 1/ 2 milliamp. In case a measurement is outsideof the limits specified, there is a possibility of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.**

3. PREVENTION OF ELECTRO STATIC DISCHARGE (ESD) TO ELECTROSTATICALLY SENSITIVE (ES) DEVICES

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such

components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistorsand semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by electro static discharge (ESD).

1. **Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any ESD on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available dischargingESD wrist strap, which should be removed for potential shock reasons prior to applying power to the unit under test.**
2. **After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as alminum foil, to prevent electrostatic charge buildup or exposure of the assembly.**
3. **Use only a grounded-tip soldering iron to solder or unsolder ES devices.**
4. **Use only an anti-static solder removal device. Some solder removal devices not classified as "anti-static (ESD protected)" can generate electrical charge sufficient to damage ES devices.**
5. **Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.**
6. **Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, alminum foil or comparableconductive material).**
7. **Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.**

   Caution

   Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.
8. **Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise hamless motion such as the brushing together of your clothes fabric or the lifting of your foot from a**

carpeted floor can generate static electricity (ESD) sufficient todamage an ES device).

IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are imporant for safety.
These parts are marked by ⚠ in the schematic diagrams, Exploded Views and replacement parts list. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire, or other hazards. Do not modify the original design without permission of manufacturer.

4. Precaution of Laser Diode

CAUTION:

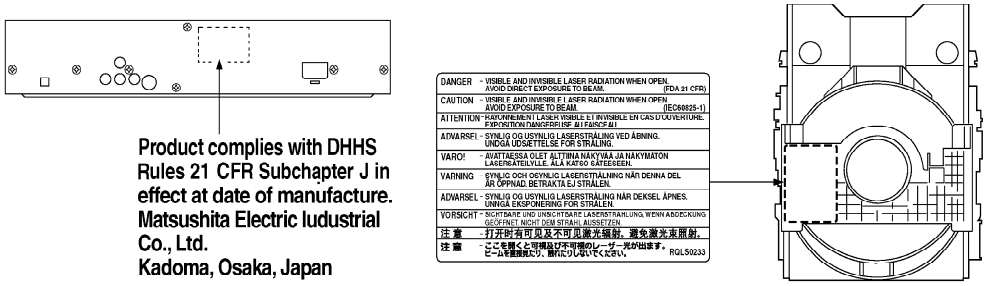
This product utilizes a laser diode with the unit turned "on", invisible laser radiation is emitted from the pickup lens.
Wave length:658 nm/790 nm
Maximum output radiation power from pickup: 100 μ W/VDE
Laser radiation from the pickup lens is safety level,but be sure the followings:

1. Do not disassemble the optical pickup unit, since radiation from exposed laser diode is dangerous.
2. Do not adjust the variable resistor on the pickup unit. It was already adjusted.
3. Do not look at the focus lens using optical instruments.
4. Recommend not to look at pickup lens for a long time.

ACHTUNG:

Dieses Produkt enthält eine Laserdiode.
Im eingeschalteten Zustand wird unsichtbare Leserstrahlung von der Laserinheit adgestrahit.
Wellenlänge: 658 nm/790 nm
Maximale Strahlungsleistung der Lasereinheit: 100 μ W/VDE
Die Strahlungan der Lasereinheit ungefährlich, wenn folgende Punkte beachtet werden:

1. Die Lasereinheit nicht zerlegen, da die Strahlung an der freigelegten Laserdiode gefährlich ist.
2. Den werkseitig justierten Einstellregler der Lasereinhit nicht verstellen.
3. Nicht mit optischen Instrumenten in die Fokussierlines blicken.
4. Nicht über längere Zeit in die Fokussierlines blicken.


Product complies with DHHS Rules 21 CFR Subchapter J in effect at date of manufacture.
Matsushita Electric Iudustrial Co., Ltd.
Kadoma, Osaka, Japan
DANGER - VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID DIRECT EXPOSURE TO BEAM. (FDA 21 CFR)
CAUTION - VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO BEAM. (IEC60825-1)
ATTENTION - RAYONNEMENT LASER VISIBLE ET INVISIBLE EN CAS D'OUVERTURE. EXPOSITION DANGEREUSE AU FAISCEAU
ADVARSEL - SYNLIG OG USYNLIG LASERSTRÅLING VED ÅBNING. UNDGÅ UDSÆTTELSE FOR STRÅLING.
VARO! - AVATTAESSA OLET ALTTIINA NÄKYVÄÄ JA NÄKYMÄTÖN LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.
VARNING - SYNLIG OCH OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD. BETRAKTA EJ STRÅLEN.
ADVARSEL - SYNLIG OG USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES. UNNGÅ EKSPONERING FOR STRÅLEN.
VORSICHT - SICHTBARE UND UNSICHTBARE LASERSTRAHLUNG, WENN ABDECKUNG GEÖFFNET. NICHT DEM STRAHL AUSSETZEN.
注 意 - 打开时有可见及不可见激光辐射，避免激光束照射。
注 意 - ここを開くと可視及び不可視のレーザー光が出ます。ビームを直接見ない、触れないでください。
RQLS0233

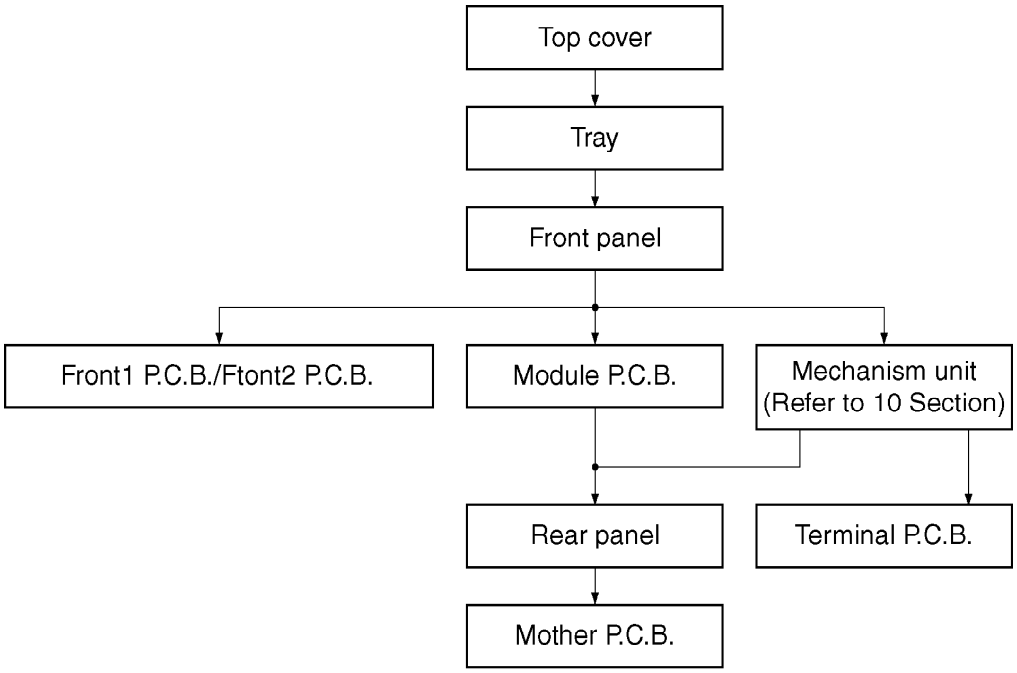
CAUTION!
THIS PRODUCT UTILIZES A LASER.
USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

5. General Description

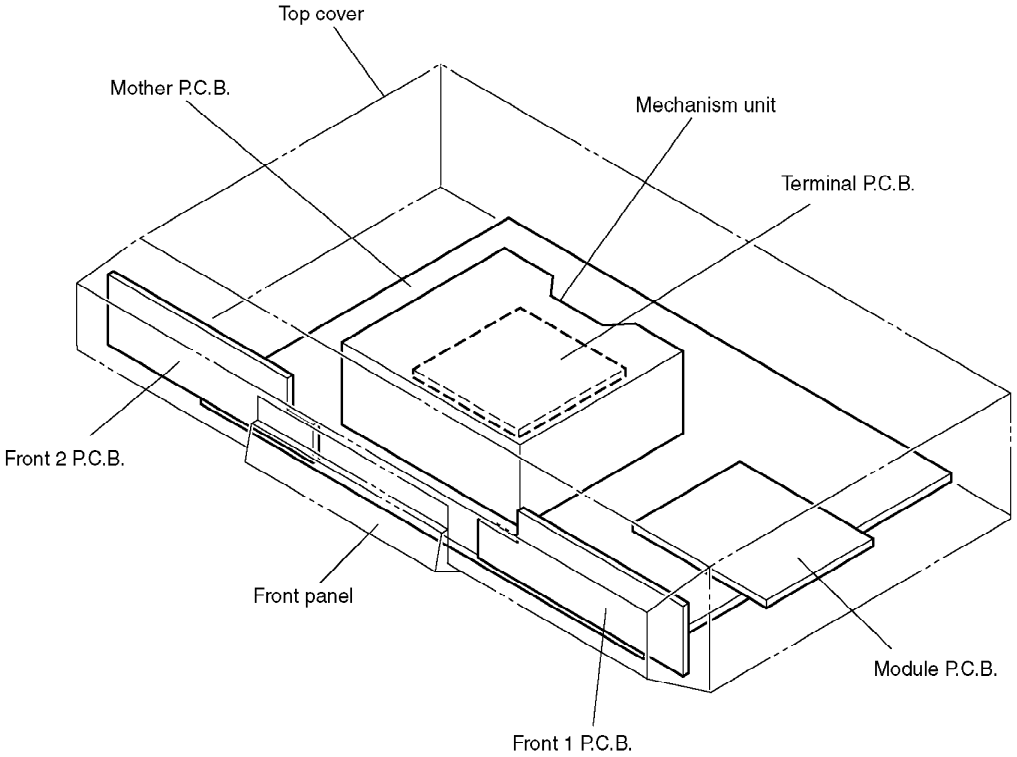
5.1. Operating instructions

6. Disassembling the Casing and Checking P.C.B.s

6.1. Dissasembly Procedure

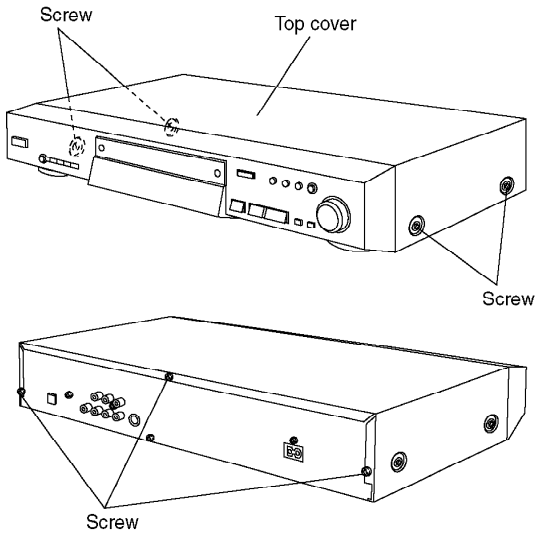


6.2. Caseing Parts and P.C.B. Positions



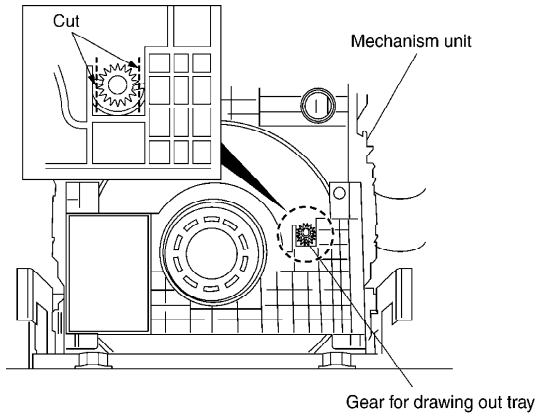
6.3. Top Cover

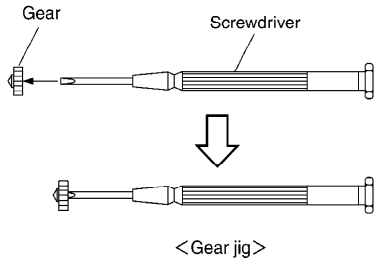
1. Unscrew the screws.



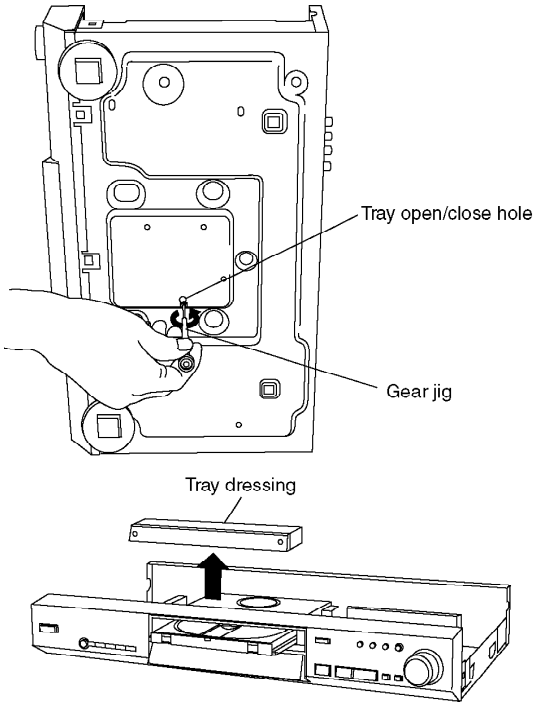
6.4. Tray

1. **Pull the tray out of the mechanism unit. Remove the gear and install it onto a screwdriver to make a gear jig.**
2. **Insert the gear jig into the tray open/close hole.**
3. **Turn the gear jig counterclockwise to open the tray.**
4. **Remove the tray dressing from the tray section.**





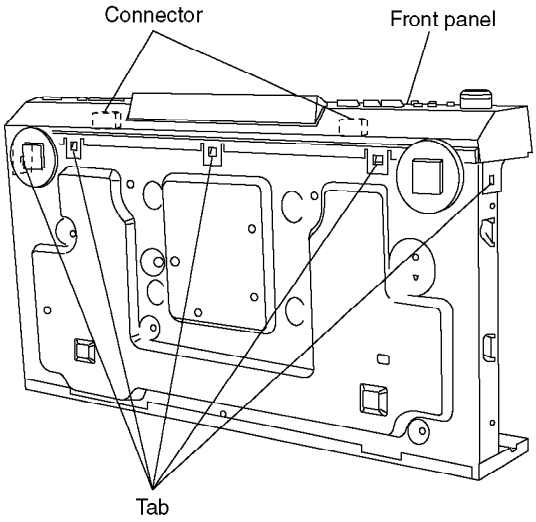
<Gear jig>



6.5. Front Panel

1. Release the tabs.

2. Remove the connectors.

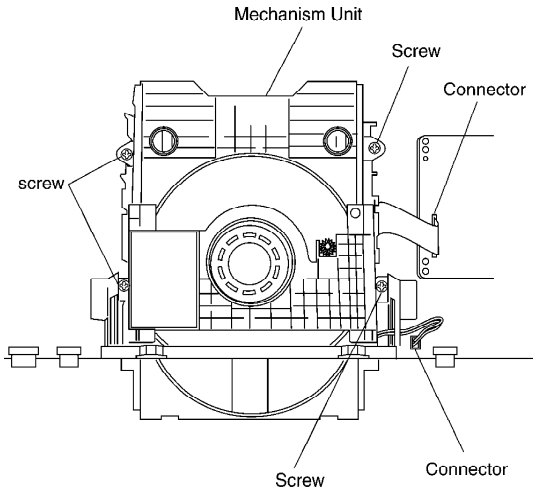


6.6. Mechanism Unit

1. Unscrew the screws.

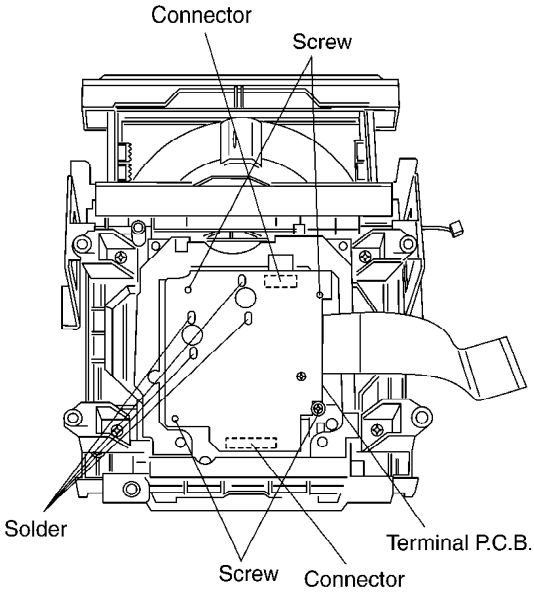
2. Remove the connectors.

3. Pull out the mechanism unit vertically.



6.7. Terminal P.C.B.

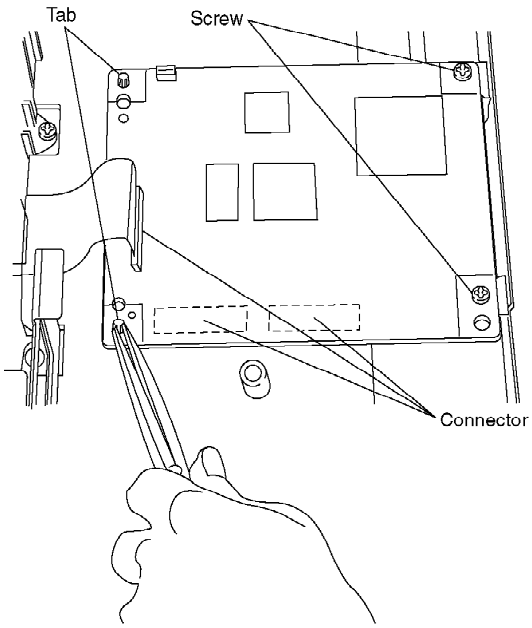
1. Unscrew the screws.
2. Remove the solders.
3. Remove the connectors.



＜Mechanism unit bottom＞

6.8. Module P.C.B.

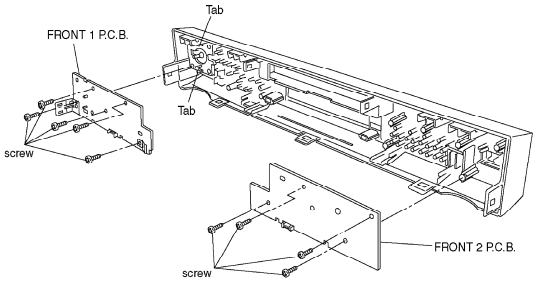
1. Unscrew the screws.
2. Remove the connectors.
3. Press each tab with the nipper to pull out the module PCB vertically.



6.9. Front-1 P.C.B. and Front-2 P.C.B.

1. Unscrew the screws.

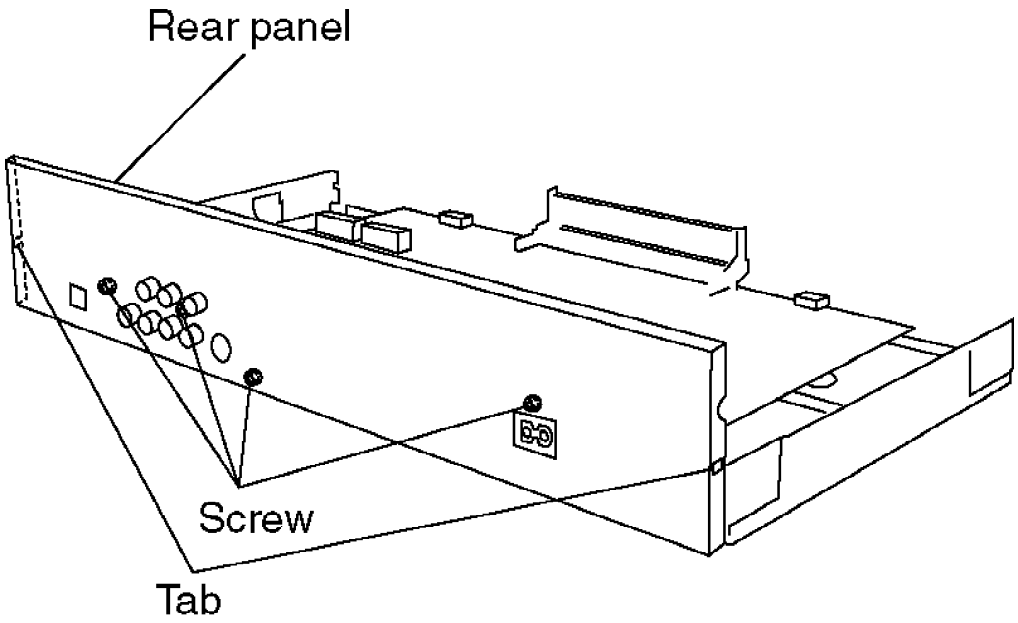
2. Release the tabs.



6.10. Rear panel

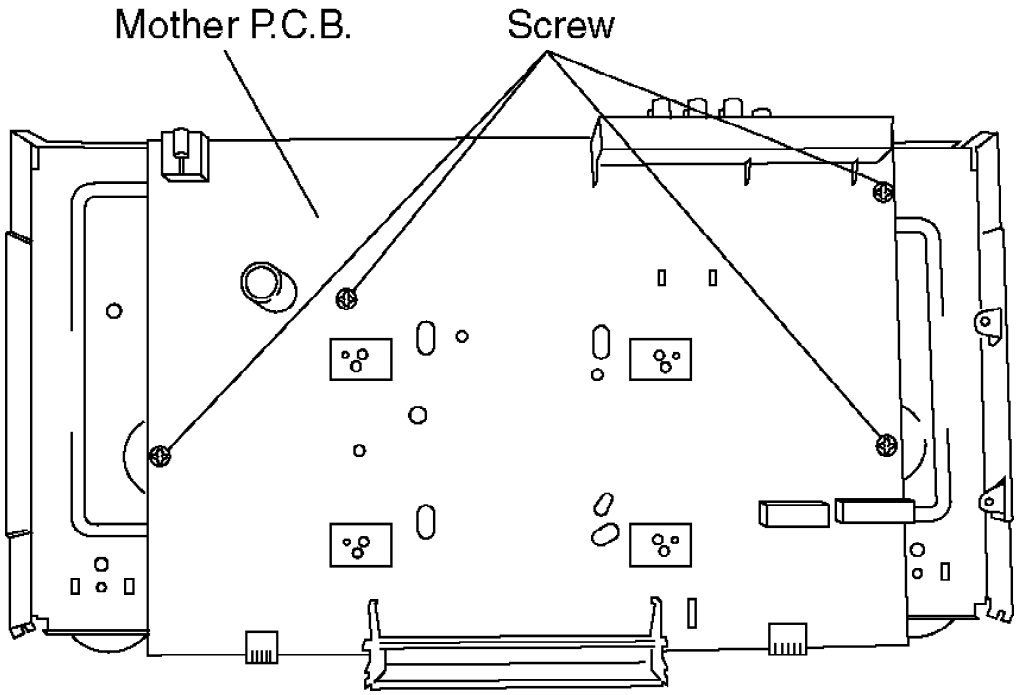
1. Unscrew the screws

2. Release the tabs.



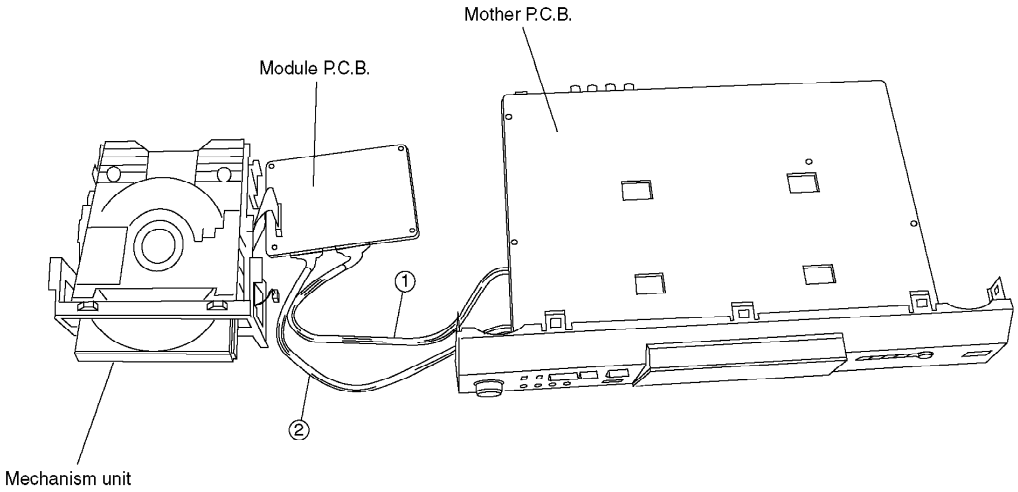
6.11. Mother P.C.B.

1. Unscrew the screws.

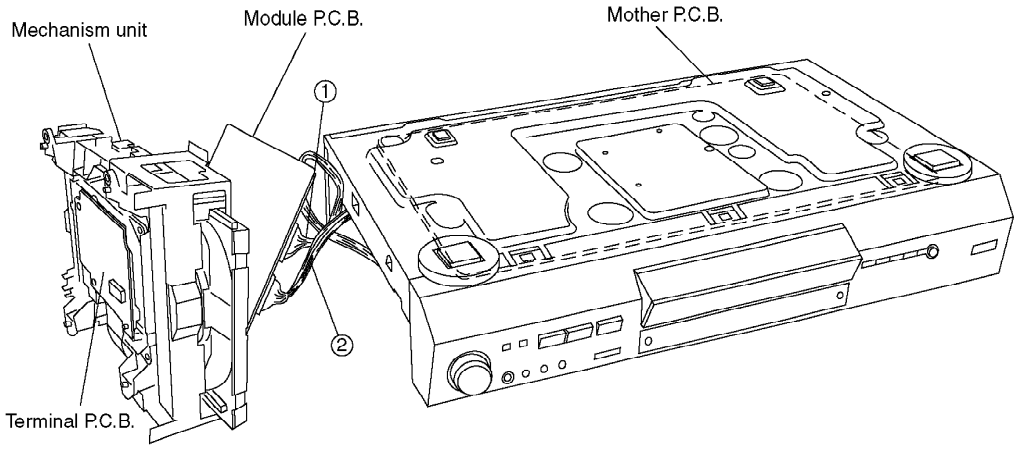


6.12. Servicing Position

6.12.1. Servicing position of the Module P.C.B.



6.12.2. Servicing position of the Terminal P.C.B.



6.12.3. List of the Extention Cables

①	VUC8026	14pins	PS4201(Module P.C.B.)—PP4301(Mother P.C.B.)
②	JGS0116	22pins	PS3201(Module P.C.B.)—PP3201(Mother P.C.B.)

7. PREVENTION OF STATIC ELECTRICITY DISCHARGE

The laser diode in the traverse unit (optical pickup) may brake down due to static electricity of clothes or human body. Use due caution to electrostatic breakdown when servicing and handling the laser diode.

7.1. Grounding for electrostatic breakdown prevention

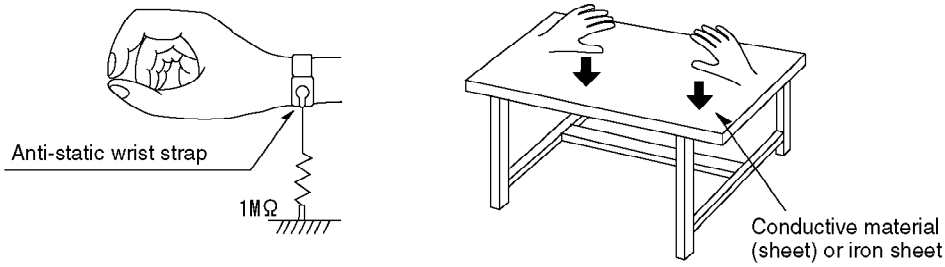
Some devices such as the DVD player use the optical pickup (laser diode) and the optical pickup will be damaged by static electricity in the working environment. Proceed servicing works under the working environment where grounding works is completed.

7.1.1. Worktable grounding

1. Put a conductive material (sheet) or iron sheet on the area where the optical pickup is placed, and ground the sheet.

7.1.2. Human body grounding

1. **Use the anti-static wrist strap to discharge the static electricity form your body.**



7.1.3. Handling of optical pickup

1. **To keep the good quality of the optical pickup maintenance parts during transportation and before installation, the both ends of the laser diode are short-circuited. After replacing the parts with new ones, remove the short circuit accordingto the correct procedure. (See this Technical Guide.)**
2. **Do not use a tester to check the laser diode for the optical pickup. Failure to do so will damage the laser diode due to the power supply in the tester.**

7.2. Handling Precautions for Traverse Unit (Optical Pickup)

1. **Do not give a considerable shock to the traverse unit (optical pickup) as it has an extremely high-precise structure.**
2. **When replacing the optical pickup, install the flexible cable and cut its short land with a nipper. See the optical pickup replacement procedure in this Technical Guide. Before replacing the traverse unit, remove the short pin for preventingstatic electricity and install a new unit. Connect the connector as short times as possible.**
3. **The flexible cable may be cut off if an excessive force is applied to it. Use caution when handling the cable.**
4. **The half-fixed resistor for laser power adjustment cannot be adjusted. Do not turn the resistor.**

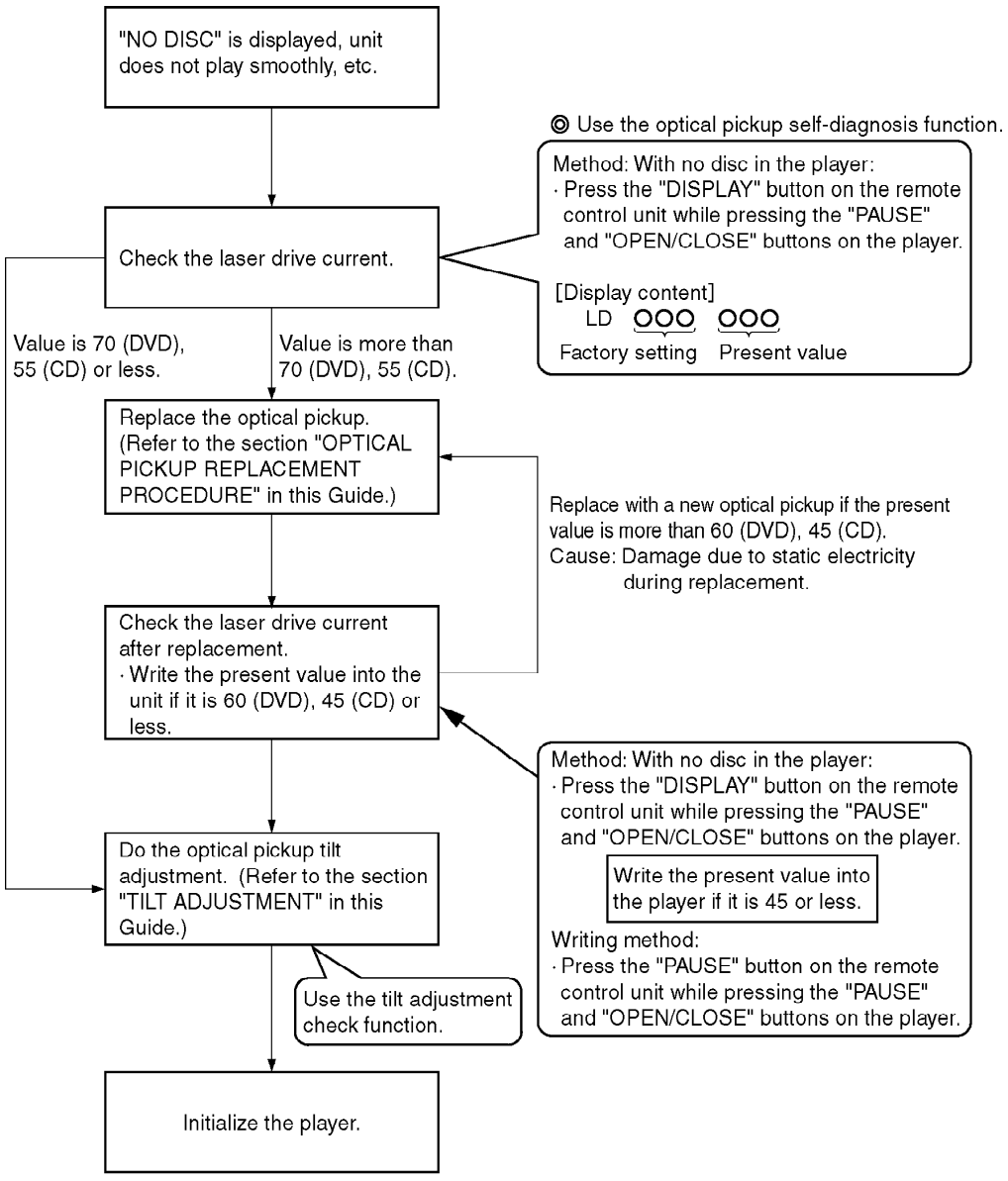
8. OPTICAL PICKUP SELF-DIAGNOSIS AND

REPLACEMENT PROCEDURE

8.1. Self-diagnosis

The optical pickup self-diagnosis function and tilt adjustment check function have been included in this unit. When repairing, use the following procedure for effective Self-diagnosis and tilt adjustment.Be sure to use the self-diagnosis functionbefore replacing the optical pickup when "NO DISC" is displayed. As a guideline, you should replace the optical pickup when the value of the laser drive current is more than 55.

Note:
Press the power button to turn on the power, and check the value within three minutes before the unit warms up. (Otherwise, the result will be incorrect.)


"NO DISC" is displayed, unit does not play smoothly, etc.
◎ Use the optical pickup self-diagnosis function.
Method: With no disc in the player:
· Press the "DISPLAY" button on the remote control unit while pressing the "PAUSE" and "OPEN/CLOSE" buttons on the player.
[Display content]
LD OOO OOO
Factory setting Present value
Check the laser drive current.
Value is 70 (DVD), 55 (CD) or less.
Value is more than 70 (DVD), 55 (CD).
Replace the optical pickup. (Refer to the section "OPTICAL PICKUP REPLACEMENT PROCEDURE" in this Guide.)
Replace with a new optical pickup if the present value is more than 60 (DVD), 45 (CD).
Cause: Damage due to static electricity during replacement.
Check the laser drive current after replacement.
· Write the present value into the unit if it is 60 (DVD), 45 (CD) or less.
Method: With no disc in the player:
· Press the "DISPLAY" button on the remote control unit while pressing the "PAUSE" and "OPEN/CLOSE" buttons on the player.
Write the present value into the player if it is 45 or less.
Writing method:
· Press the "PAUSE" button on the remote control unit while pressing the "PAUSE" and "OPEN/CLOSE" buttons on the player.
Do the optical pickup tilt adjustment. (Refer to the section "TILT ADJUSTMENT" in this Guide.)
Use the tilt adjustment check function.
Initialize the player.

8.2. Cautions to Be Used Before Replacing the Optical Pickup Unit

and Spindle Motor Assembly

Before replacing the optical pickup unit and spindle motor assembly, check the total using hours for each of them. The checking method is as follows:

	Operating state & Key operation	Display
Using hours of CD laser	Press "PAUSE", FWD-SKIP" and "5" on the remote control in this order while the unit is stopped	T1_xxxx_yyyy yyyy: total hours are displayed by 4-digit figures (unit: 10 hours).
Using hours of DVD laser	Press "PAUSE", FWD-SKIP" and "5" on the remote control in this order while the unit is stopped	T1_xxxx_yyyy yyyy: total hours are displayed by 4-digit figures (unit: 10 hours).
Using hours of SP motor	Press "PAUSE", FWD-SKIP" and "6" on the remote control in this order while the unit is stopped	T2_xxxx xxxx: total hours are displayed by 4-digit figures (unit: 10 hours).
Resetting using hours of CD and DVD lasers (Simultaneous resetting)	Press " STOP ", FWD-SKIP" and "6" on the remote control in this order while the unit is stopped	T1_0000_0000
Resetting using hours of the motor	Press " STOP ", FWD-SKIP" and "6" on the remote control in this order while the unit is stopped	T2_0000

Cautions to be taken when replacing the optical pickup
The optical pickup may break down due to the static electricity of human body. Take proper protection measures against static electricity before repairing the parts around the optical pickup. (See the page describing the PREVENTION OF STATIC ELECTRICITYDISCHARGE.)

1. Do not touch the areas around the laser diode and actuator.

2. Do not judge the laser diode with a tester. (The tester will be damaged easily.)

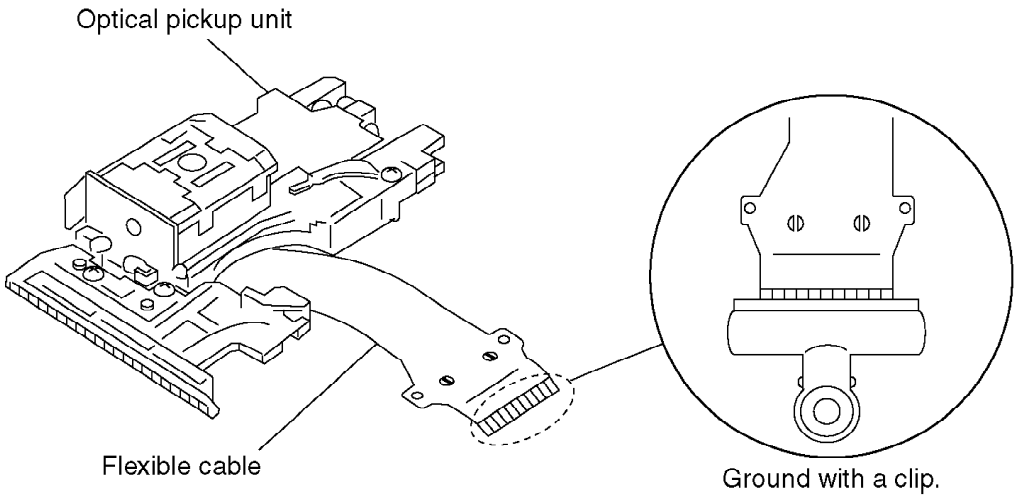
3. It is recommended to use a destaticized soldering iron for short-circuiting or removing the laser diode. (Recommended soldering iron) HAKKO ESD Product

4. Solder the land of the flexible cable in the optical pickup.

Note:

- When using a soldering iron which is not destaticized, short-circuit the terminal face of the flexible case with a clip. After that, short-circuit the land.

- After the repairing work is completed, remove the solder according to the correct procedure shown in this Technical Guide.



9. Self-Diagnosis Function and Service Modes

9.1. New servicing method for DVD player (5th generation models)

With the 5th generation models new self-diagnosis function and new servicing method described below are additionally available.

9.1.1. Firmware updating and recovery with disc

- Recovery

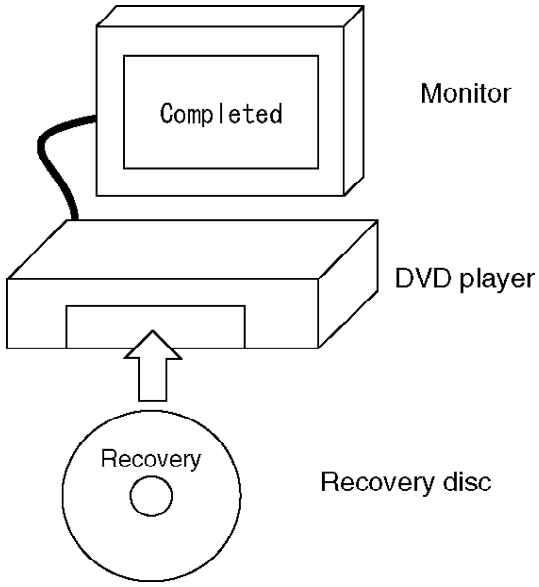
- Firmware updating

Simply run the recovery disc. Then both of the above operations are automatically performed.

Commercially available CD-R can now perform updating and recovery process, making it easier to update the version.

Recovery process: Optimization of player after replacement of FROM, EEPROM and modular P.C.B.

Version updating: Firmware updating for improved operability and performance



9.1.2. New self-diagnosis function

- Cumulative operation time display function (Spindle motor and DVD /CD laser)

- Servo process display function

- ADSC internal RAM display function

- Other: Increased number of last errors storage
1event →20 events
Utilization of the above functions, in combination with servicing procedures, is expected to contribute to higher efficiency of fault diagnosis.

[Purposes]
Operation time display function: For faultfinding of spindle motor or laser that has limited service life
Servo process display: For fault diagnosis of player startup malfunction
ADSC internal RAM display function: For faulty part identification in servo system using the learned values

9.2. How to use recovery disc

9.2.1. Performing recovery

1. Load the recovery disc RFKZD5TR006 on to the player and run it.

2. Recovery is performed automatically. When it is finished, a message appears on the screen.

3. Remove the recovery disc.

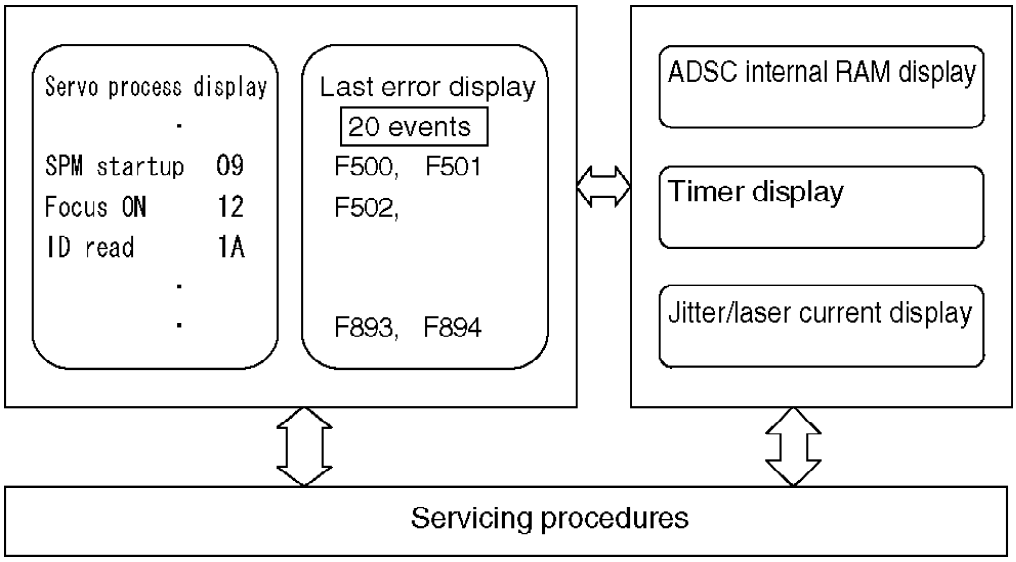
4. Turn off the power.

9.2.2. Updating firmware

1. Load the recovery disc RFKZD5TR006 on to the player and run it.
2. Firmware version of the player is automatically checked.
   Appropriate message appears whenever necessary.
3. Using remote controller's cursor key, select whether version updating is to be done or not. (Selection of Yes/No)
4. a. If Yes is selected, version updating is performed.
   b. If No is selected, only recovery is performed.
5. a. When updating is finished, remove the disc according to the message appearing on the screen.
   b. Remove the disc according to the message appearing on the screen.
6. Turn off the power.

9.3. Fault diagnosis using new self-diagnosis function

The 5th generation DVD players have the additional new service modes as described above to further reinforce the diagnosis function.
These new functions are unable to bring sufficient results when they are used alone. Effective fault diagnosis can be expected when multiple diagnostic methods are properly combined in accordance with the servicing procedures depending on specific fault status.



*** New servicing procedures are now under study to match with the newly developed self-diagnosis functions introduced here.**
Details of the new servicing procedures will be informed from time to time.

1. Cumulative operation time display function
   For spindle motor and DVD/CD laser, the cumulative operation

time is displayed.
When servicing, check the timer display and use it as information for fault diagnosis.
At the time of repair and replacement of these components, make sure to check the operation time and reset the timer after replacement.
Operation time of the replacement parts (spindle motor and laser) is the valuable information as actual data for future product quality.
Please save the records and supply information to us.

2. Servo process display function
This additional function is intended to improve efficiency of fault diagnosis, especially for the player's startup failure, in combination with the learned value data of ADSC internal RAM.

3. ADSC internal RAM display function
The function is to display the internal RAM data of ADSC servo processor.
The RAM data are the learned values of drive servo, memorizing those concerning focus and tracking, as well as data slice and equalizer.
* This function is also a newly developed service mode. Its full utilization is still under study.

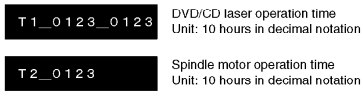
4. Others

- Increased number of last errors stored
  1event → 20 events
  Focus drive value display function

9.4. Overview of each function

9.4.1. Cumulative operation time display

1. Operation/display



Key operations are as follows.
Laser operation time ..... In STOP mode, main unit PAUSE+ FWD-SKIP+ remote controller [5]

Spindle motor operation time ..... In STOP mode, main unit PAUSE +FWD-SKIP+ remote controller [6]
To reset the timer, perform the following while displaying the time with above key operation.
Laser operation time ..... In STOP mode, main unit STOP+FWD -SKIP+ remote controller [5]
Spindle motor operation time ..... In STOP mode, main unit STOP+ FWD-SKIP+ remote controller [6]

2. **How to utilize**
   Reference information in fault diagnosis of laser or spindle motor system
   Review of faulty point in repeated repair

9.4.2. Servo process display

1. **Operation/display**
   While the player is in STOP mode, perform the specified key operation to display the servo process number on FL.
   When the display does not change from the error indication, press Open/Close key to show the servo process number.
   Key operation: In STOP mode, main unit PAUSE+FWD- SKIP+ remote controller [7]

Number to the left ..... Process number when halted
Number to the right ..... Process number in progress

9.4.3. ADSC internal RAM display function

1. **Operation/display**
   Key operation: Main unit PAUSE+OPEN + remote controller [RETURN] Operate the remote controller [CLEAR] key to update internal RAM address and display 11 learned values.
   Table 1 shows the descriptions of the display.

2. **How to utilize**
   At present, learned values of ADSC internal RAM are expected to be useful for the following faulty part identification.
   Use how learned value changes from initial value to find whether faulty part exists before or after ADSC in the focus/tracking servo system.
   [Focus system]

When focus gain remains at initial value and tracking gain changes, fault exists before ADSC input.
When focus gain changes and tracking gain remains at initial value, fault exists after ADSC output.
[Tracking system]
When focus gain remains at initial value and tracking gain changes, fault exists after ADSC output.
When focus gain changes and tracking gain remains at initial value, fault exists before ADSC input.

Table 1 ADSC internal RAM learned value

Address	Memory data	Data range	Standard value
4B4	Focus gain learned value except for DVD DL (L1 layer)	0040h~0800h	200h
4BC	Focus gain learned value of DVD DL (L1 layer)	0040h~0800h	200h
4B6	Focus balance learned value except for DVD DL (L1 layer)	B000h~5000h	0000h
4BE	Focus balance learned value of DVD DL (L1 layer)	B000h~5000h	0000h
4B5	Tracking gain learned value except for DVD DL (L1 layer)	0040h~0800h	200h
4BD	Tracking gain learned value of DVD DL (L1 layer)	0040h~0800h	200h
TB0	Tracking balance learned value of DVD SL and DL (L0)	0060h~FFA0h	0000h
	Tracking balance learned value of CD and VCD	B000h~5000h	0000h
TB1	Tracking balance learned value of DVD DL (L1 layer)	FFA0~0060h	0000h
DBD	DSL offset learned value of DVD	9000h~F000h	
DBC	DSL offset learned value of CD and VCD	9000h~F000h	
FC0	Equalizer FC value except for DVD DL (L1 layer)	0000h~0004h	
BT0	Equalizer BOOST value except for DVD DL (L1 layer)	0000h~0004h	
FC1	Equalizer FC value of DVD DL (L1 layer)	0000h~0004h	
BT1	Equalizer BOOST value of DVD DL (L1 layer)	0000h~0004h	

Notes:

1. **Learned values of focus balance and tracking balance are the coded binary data.**
2. **DSL offset learned value is effective only in upper 2 digits. (Lower**

2 digits, normally 06, are ignored.)

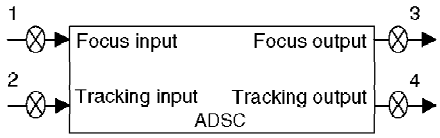
Picking up servo learned value (Determined)

1. **Focus (primary)/tracking balance learning ... When leading in focus**
2. **Focus/tracking gain and equalizer ... When leading in tracking**
3. **Focus balance (secondary) ... When leading in tacking**

[Note]
When fault exists somewhere after tracking servo, the disc type is switched by retry to make learned value different from the one in normal startup.

Initial learned value: Gain = 0200
Balance = 0000
DSL = C406/CC06 (Differs depending on P.C.B.)
Equalizer = 0000

Equalizer value is entered when RF signal is sent out.
When focus/tracking servo system circuit is faulty, the gain learned value changes from initial value as follows.



Disconnection point →	1	2	3	4
Focus gain	0200	00A0	00A0	0200
Tracking gain	0400	0200	0200	0400

Examples of ADSC internal RAM learned value display

9.5. Service Mode Table 1

The service modes can be activated by pressing various button combination on the player and remote control unit.

Player buttons	Remote control unit buttons	Application	N
PAUSE / + / OPEN/CLOSE	0	Displaying the UHF display F_ _ _	Refer to 9.6. Self- Diagnos Functior Display)
	5	Jitter check, tilt adjustment *Display shows J_xxx_yyy_zz "yyy" and "zz" shown to the right have nothing to do with the jitter value. "yyy" is the error counter, while "zz" is the focusdrive value. Refer to section 10.4. for Optical Pickup Tilt Adjustment Procedure.	Refer to 11.4. Op Pickup T Adjustm
	6	Checking the region numbers and broadcast system	
	7	Checking the program version	Check th FLASH I program
	9	Lighting Confirmation Function of Display Tube	
	DISPLAY	Checking the laser drive current	Refer to 10 Optic Replace Procedu
	PAUSE	Writing the laser drive current value after replacing the optical pickup (do not use for anything other than optical pickup replacement)	
PAUSE / SKIP/ SEARCH<< / OPEN/CLOSE		Initializing the DVD player (restoring factory preset settings) *Use when replacing a microprocessor, microprocessor peripheral, or P.C.B.	Refer to 9.2. Initi DVD pla

9.6. DVD Self Diagnostic Function-Error Code

Error Code	Error Content	Additional error explanation	Defect 1	Defect 2	Defect 3
	U, H error				
U11	Focus error				
H01	Tray loading error				
H02	Spindle servo error	(Spindle servo, DSC SP motor, CLV servo error)			
H03	Traverse servo error				
H04	Tracking servo error				
H05	Seek error				
H06	Power error	Cannot switch off the power because of the panel and system computer communication error			
	DSC related				
F500	DSC error	DSC stops in the occurence of servo error (starup, focus error, etc)	OPU	ADSC	FEP
F501	DSC not Ready	DSC-system computer communication error (Communication failure caused by idling of DSC)	ADSC	CPU	
F502	DSC Time out error	Similar disposal as F500	OPU	ADSC	FEP
F503	DSC communication Failure	Communication error (result error occured although communication command was sent)	ADSC	FEP	EEPROM
F505	DSC Attention error	Similar disposal as F500	OPU	ADSC	FEP
F506	Invalid media	Disc is flipped over, TOC unreadable, incompatible disc	DISC	FEP	ADSC
	ODC related				
F600	Access failure to management information caused by demodulation error	Operation stopped because navigation data is not accessible caused by the demodulation defect	ODC	FEP	ADSC
F601	Indeterminate sector ID requested	Operation stopped caused by the request to access abnormal ID data	ODC	FEP	ADSC
F602	Access failure to LEAD-IN caused by demodulation error	LEAD IN data unreadable			

Error Code	Error Content	Additional error explanation	Defect 1	Defect 2	Defect 3
F603	Access failure to KEYDET caused by demodulation error	Access failure to CSS data of disc			
F610	ODC abnormality	No permission for command execution	ODC		
F611	6626 QCODE don't read Error	Access failure to seek address in CD series	ODC		
F612	No CRC OK for a specific time	Access failure to ID data in DVD series	ODC		
F630	No reply to KEY DET enquiry	(for internal use only)			
F631	CPPM KEY DET is not available till the FILE terminal	(CPPM file system is unreadable caused by scratches)	DISC	CPPM	
F632	CPPM KEY DET is not available	Been revoked or falsified	DISC	EEPROM	CPPM
	Disc code				
F103	Illegal highlight Position	Big possibility of disc specification violation during highlight display	DISC		
	HIC Error				
F4FF	Force initialize failure (time out)		EEPROM	CPU	FEP
	Micro computer error				
F700	MBX overflow	When replying message to disc manager			
F701	Message command does not end	Next message is sent before replying to disc manager			
F702	Message command changes	Message is changed before it is sent as a reply to disc manager			
F880	Task number is not appropriate	Message coming from a non-existing task			
F890	Sending message when message is being sent to AV task	Sending message to AV task			
F891	Message couldn't be sent to AV task	Begin sending message to AV task			

Error Code	Error Content	Additional error explanation	Defect 1	Defect 2	Defect 3
F893	FROM falsification		FROM	CPU	
F894	EEPROM abnormality		EEPROM	Serial / communication on lone	
F8A0	Message command is not appropriate	Begin sending message to AV task			

9.7. Last Error Code saved during NO PLAY

Error code	Error Content	System computer	Setting task	System computer i error code
F0BF	6) Cannot playback because physical layer is not recoginizable	PCND_NOPLAY PHYSICAL 0x50	DriveManager	0xDOBF
F0C0	8) DVD: Cannot playback because it is not DVD Video/Adio/VR	PCND_NOPLAY VIDEO 0x70	DiscManager	0xDOC0
F0C1	9) DVD: Prohibited by the restricted region code	PCND_NOPLAY RCD 0x80	DiscManager	0xDOC1
F0C2	A) DVD: PAL restricted playback	PCND_NOPLAY PAL 0x90	DiscManager	0xDOC2
F0C3	B) DVD: Parental lock setting prohibits the playback of the entire title	PCND_NOPLAY PTL 0xA0	DiscManager	0xDOC3
F0C4	C) VCD: Prohibited because it is in PHOTO CD fromat	PCND_NOPLAY PHOTO CD 0xB0	DiscManager	0xDOC4
F0C5	VCD/CD: Prohibited because it is CDROM without CD-DA	PCND_NOPLAY CDROM 0xC0	DiscManager	0xDOC5

9.8. Self-diagnosis Function and Service Modes

Improving the self-diagnosis function
The self-diagnosis funciton in our DVD player currently in use is improved as follows:

Our DVD player currently in use	Our new DVD	
UHF error display The latest error storage function n=1	UHF error display The latest error storage n=20	The storage capacity is incraesed.
Jitter/read error display	Jitter/read error display Focus drive value display	The focus drive current value can be displayed.
Laser drive current display For DVD	Laser drive current display For DVD/CD	
	ADSC internal RAM data display	The servo learning value stored in the RAM data inside the ADSC (servo controller) IC is displayed.
	Servo process display	Mainly in the initial starting operation period of the player, a number is allotted to the servo process of each step, and the process of the starting operation can be displayed.
	Total operation time display SP motor Laser (DVD/CD)	The operation times of SP motor and the laser (both for the DVD and CD) can be displayed.

9.9. Service mode table 2

Pressing various button combinations on the player and remote control unit can activate the service modes.

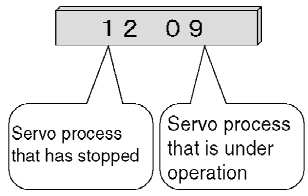
Item	Player mode and button combination	Function	Display	Cancellation method
Jitter check	In PLAY mode, press PAUSE and OPEN buttons on the player, and "5" button on the remote control unit.	Jitter check Jitter rate is measured and displayed. Measurement is repeatedly done in the cycle of one second. Read error counter starts from zero upon mode setting. When target block data failed to be read out, the counter advances by one increment. When the failure is caused by minor error, it may be corrected when retried to enable successful reading. In this case, the counter advances by one. When the error persists even after retry, the counter may jump by two or more.	J _xxx_yyy_zz Focus drive value Read error counter Jitter rate Jitter check mode Jitter rate is shown in decimal notation to one place of decimal. Focus drive value is shown in hexadecimal notation.	Press STOP or OPEN button.
Error code check	In ** mode, press PAUSE and OPEN buttons on the player, and "0" button on the remote control unit. * With pointing of cursor up and down on display, the panel controller switches serial number of history and sends out the command accordingly.	Error code check The latest error code stored in EEPROM is displayed.	Error code (play_err) is expressed in the following convention. Error code = 0 x DAXX is expressed: -> nn UXX Error code = 0 x DBXX is expressed: -> nn HXX Error code = 0 x DXXX is expressed: -> nn FXXX Error code = 0 x 0000 is expressed: -> nn F--- * "nn" denotes the serial number of history.	Cancelled automatically 5 seconds later.
Initial setting of laser drive current	In STOP mode, press PAUSE and OPEN buttons on the player, and PAUSE button on the remote control unit.	Initial setting of laser drive currentInitial current value for each of DVD laser and CD laser is separately saved in EEPROM.	LDO_034_028 CD laser current measurement DVD laser current measurement Laser current measurement mode The value denotes the current in decimal notation. The above example shows the initial current is 34mA and 28mA for DVD laser and CD laser respectively when the laser is witched on.	Cancelled automatically 5 seconds later.
DVD laser drive current measurement	In STOP mode, press PAUSE and OPEN buttons on the player, and DISPLAY button on the remote control unit.	DVD laser drive current measurement ·DVD laser drive current is measured and the result is displayed together with the initial value stored in EEPROM. After the measurement, DVD laser emission is kept on. It is turned off when POWER key is switched off. (It is also turned off when the primary power is switched off.)	LDD_034_032 Measured current Initial current stored in EEPROM DVD laser current measurement mode The value denotes the current in decimal notation. The above example shows the initial current is 34mA and the measured value is 32mA.	Cancelled automatically 5 seconds later.
ADSC internal RAM data check	In ** mode, press PAUSE and OPEN buttons on the player, and RETURN button on the remote control unit.	ADSC internal RAM data check ·ADSC internal RAM data is read out and displayed. Change the address with CLEAR key operation to show the data for 11 addresses.	A_DFA_6901 RAM data for specified address Address ADSC internal RAM data check mode The value is shown in hexadecimal notation. The above example shows the data in ADSC address DFAh is 6901h.	Press STOP or OPEN button.
Servo process display	In STOP mode, press PAUSE and FWD-SKIP buttons on the player, and "7" button on the remote control unit.	Servo process display The servo process from STOP to ACCESS is displayed.	————	Turn off the secondary power.
CD laser drive current measurement	In STOP mode, press PAUSE and FWD-SKIP buttons on the player, and DISPLAY button on the remote control unit.	CD laser drive current measurement CD laser drive current is measured and the result is displayed together with the initial value stored in EEPROM. After the measurement, CD laser emission is kept on. It is turned off when POWER key is switched off. (It is also turned off when the primary power is switched off.)	LDC_028_026 Measured current Initial current stored in EEPROM CD laser current measurement mode The value denotes the current in decimal notation. The above example shows the initial current is 28mA and the measured value is 26mA.	——

Item	Player mode and button combination	Function	Display	Cancellation method
Version display	In STOP mode, press PAUSE and OPEN buttons on the player, and "7" button on the remote control unit.	Version display	srrr_xyzzz System controller release number System controller model number System controller generation Panel controller release number Panel controller model number	Cancelled automatically 5 seconds later.
Lighting of display tube	In ** mode, press PAUSE and OPEN buttons on the player, and "9" button on the remote control unit.	Lighting of display tube	———	Press STOP or OPEN button.
Dealer's lock	In STOP mode, press STOP button on the player, and POWER button on the remote control unit.	Dealer's lock The lock is switched ON or OFF. When dealer's lock is ON, it prohibits switching off of the secondary power and tray opening. When the lock is switched, its ON/OFF status is stored in EEPROM.	· "LOCKED" sign appears when dealer's lock is switched on, or when secondary power key or tray opening key is pressed while the lock is on. ·"UNLOCKED" sign appears when dealer's lock is switched off.	Repeat the same operation.
Initialization	In STOP mode, press PAUSE, BWD-SKIP and OPEN buttons on the player for 3 seconds or longer.	Initialization User settings are cancelled and player is initialized to factory setting.	"INITIALIZED"	
Region display	In STOP mode, press PAUSE and OPEN buttons on the player, and "6" button on the remote control unit.	Region display	x__y-y__zzz Panel controller jumper information N: NTSC / 6: PAL60 N: noPAL / P: PAL Region No.	Cancelled automatically 5 seconds later.

Item	Player mode and button combination	Function	Display	Cancellation method
Timer 1 check	In STOP mode, press PAUSE and FWD-SKIP buttons on the player, and "5" button on the remote control unit.	Timer 1 check Laser operation timerOperation time is measured separately for DVD laser and CD laser.	T1_1234_5678 Shown to the left is DVD laser time, and to the right CD laser time. Time is shown in 4 digits of decimal notation in a unit of 10 hours. "0000" will follow "9999".	Cancelled automatically 5 seconds later.
Timer 1 reset	While displaying Timer 1 data, press STOP and FWD-SKIP buttons on the player, and "5" button on the remote control unit.	Timer 1 reset Laser operation timer Operation time of both DVD laser and CD laser is reset all at once.	T1_0000_0000	Cancelled automatically 5 seconds later.
Timer 2 check	In STOP mode, press PAUSE and FWD-SKIP buttons on the player, and "6" button on the remote control unit.	Timer 2 check Spindle motor operation timer	T2_1234 Time is shown in 4 digits of decimal notation in a unit of 10 hours. "0000" will follow "9999".	Cancelled automatically 5 seconds later.
Timer 2 reset	While displaying Timer 2 data, press STOP and FWD-SKIP buttons on the player and "6" button on the remote control unit.	Timer 2 reset Spindle motor operation timer	T2_0000	Cancelled automatically 5 seconds later.

9.10. Servo Process Flow

Specification of the servo process display in the starting flow



(Restrictions)
All processes that are under operati on cannot be displayed due to the limit of the processing time.

Starting flow	Range of the servo process numbers	Processing items	
		Number	Contents of each process
START			
Initial setting Tray control	00	00	Each initial setting
TRV initial movement	01	01	TRV initial movement
Disc detection	02～08	02	Initial setting in FE system
		05	Detecting LD ON HALF
		08	Detecting CD LD ON
Disc type distinction	02～08	02	Initial setting in FE system
Focus servo	10～13	12	Focus ON
		13	FBAL adjustment
Tracking servo	14～15	15	Tracking ON
Gain learning	17	17	Gain adjustment in ADSC focus system
ID read	18～1A	19	DBAL/equalizer adjustment
		1A	ID read

9.11. Servo Process Display Mode

In starting operation of the player, a number is allotted to each servo process so that the operation of each step can be seen. The relation between the process and the displayed number are as follows:

Number allotment to the servo process

Process classification	Each processing item	Description	Process number
Initial start process	Initial start	The process starts after the tray is loaded. (The state is changed to "READY" or PREPARE".)	0～40
	Secondary learning	Servos for the DVD-DL 1st layer and the CD-DA double speed are learned in this step.	50～7F
Restart process	Restart	When a user operates in the "READY" state, each servo is turned on.	80～9F
Seek process	Seek	The optical pickup is moved to the disc destination in this process.	A0～BF
Repair process	Recover		
	(Error check)	An error is searched in the PLAY/SEEK state.	C1～C3
	(Attention)	An error is recovered following the attention error interrupt from the S-ODC.	C4～C6
	(Q code read)	If any Q code is improperly read, reset and retry.	C7～C9
Stop process	Stop	A servo is controlled in response to the user's operation to stop the disc completely.	F0～FF

9.12. Sales demonstration lock function

This function prevents discs from being lost when the unit is used for sales demonstrations by disabling the disc eject function. "LOCKED" is displayed on the unit, and ordinary operation is disabled.

9.12.1. Setting

The sales demonstration lock is set by simultaneously pressing STOP button on the player and POWER button on the remote control unit.

9.12.2. Cancellation

The lock can be cancelled by the same procedure as used in setting. ("UNLOCKED" is displayed on cancellation. Disconnecting the power cable from power outlet does not cancel the lock.)

9.13. Service Precautions

9.13.1. Recovery after the dvd player is repaired

When an FROM or an EEPROM in and on the module P.C.B. has replaced, carry out the recovery disc processing to optimize the drive.
Playback the disk above to process the recovery automatically,

Recovery disc (Product number: RFKZD5TR006)

Note:
This unit requires no initialization process carried out after the traditional DVD players were repaired.
When the recovery measures are taken, the customer setting will return to the factory setting as same as the procedure described in item of "Initialization" in 8.6. is carried out. Write down the contents of the setting before recovery processing, and reset the player

9.13.2. Firmware version-up of the DVD player

The firmware of the DVD player may be renewed to improve the quality including operationability and playerbility to the substandard discs.processing to optimize the drive.
The version-up disc has also a recovery function so that you don't need use the recovery disc again.

Note:
If the AC power supply is shut out during version-up due to a power failure, the version-up is improperly carried out.
In such a case, replace the FROM and carry out the version-up again.
The product number of the version-up disc will be noticed when it is supplied.

9.14. Handling After Completing Repairs

Use the following procedure after completing repairs.

9.14.1. Method

Confirm that the power is turned on:

1. Press the "OPEN/CLOSE" button to close the tray.

2. Press the "POWER" button to turn off the power.

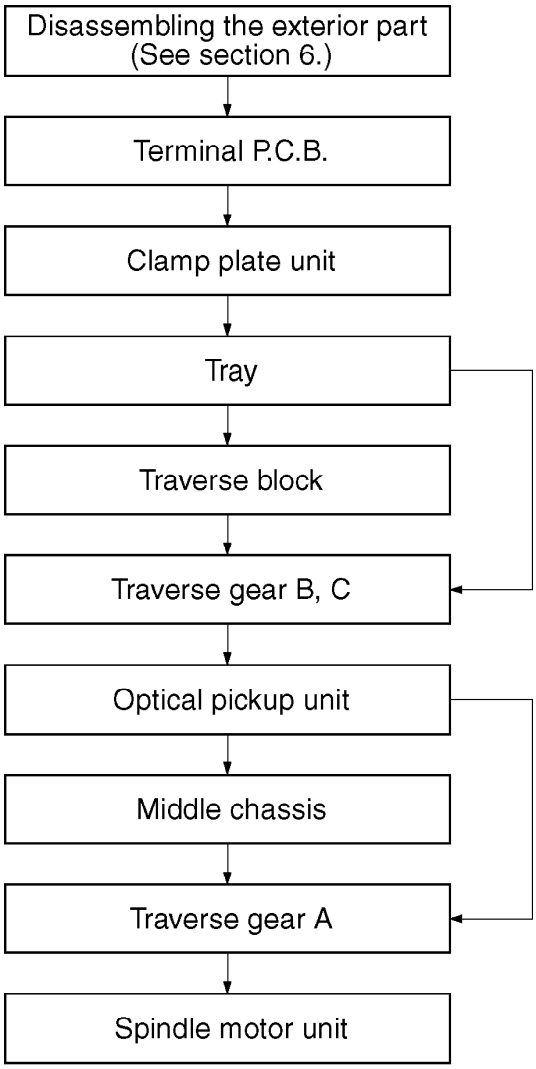
3. Disconnect the power plug from the outlet.

9.14.2. Precautions

Do not disconnect the power plug from the outlet with the tray still open, then close the tray manually.

10. ASSEMBLING AND DISASSEMBLING THE MECHANISM UNIT

10.1. Disassembly Procedure

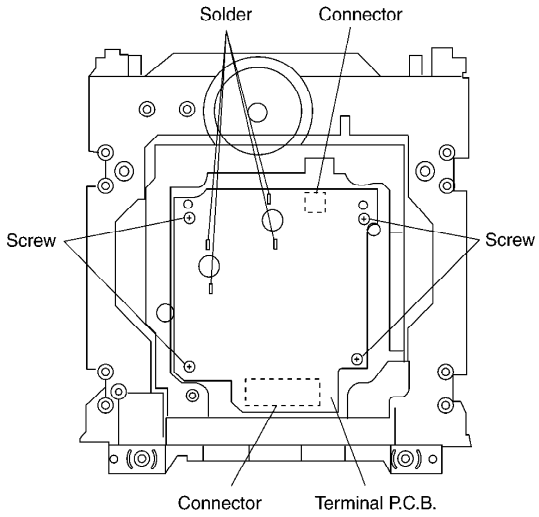


10.2. Terminal P.C.B.

1. Unscrew the screws.

2. Remove the solders.

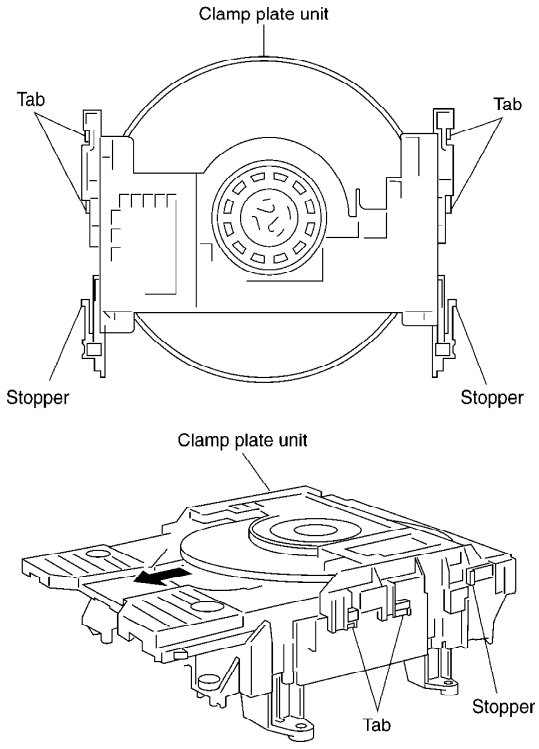
3. Remove the connectors.



<Mechanism unit bottom>

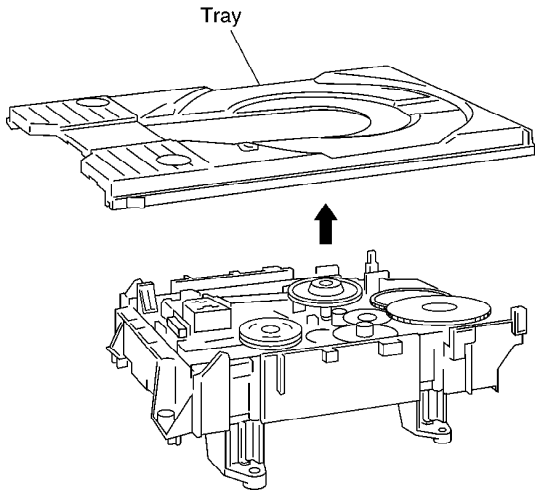
10.3. Clamp Plate Unit

1. Spread the stopper with hand to slide the tabs and remove the clamp plate unit.



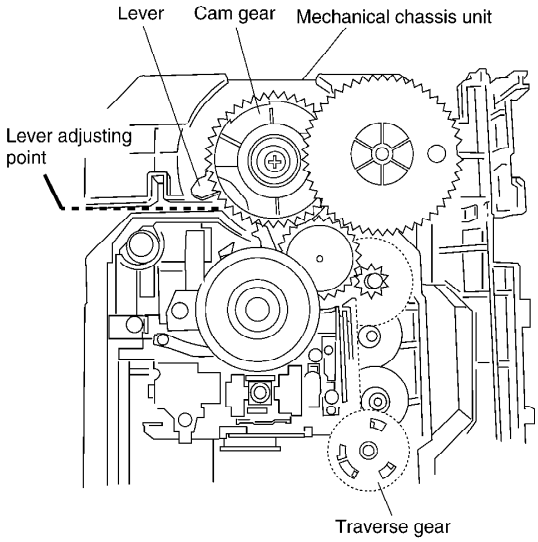
10.4. Tray

1. Lift the tray.



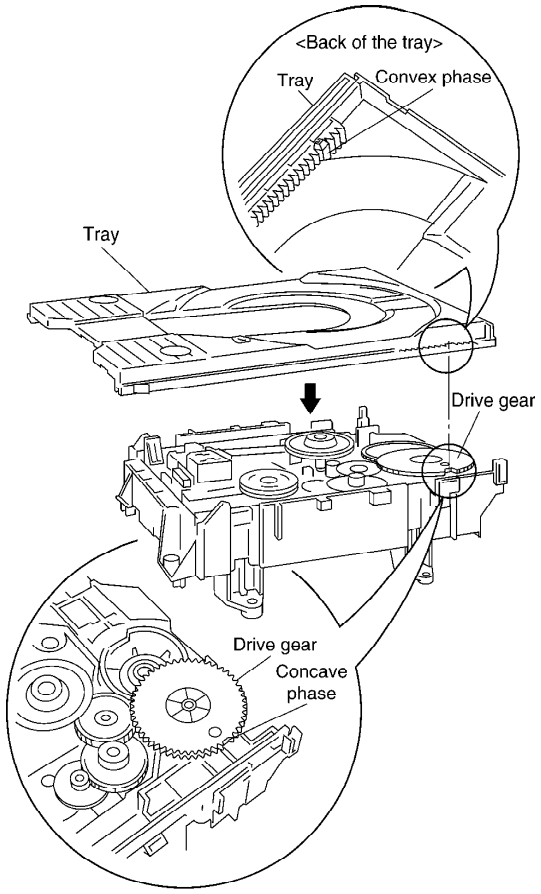
● **Reassemble the tray so that it is in the backmost position.**

1. Turn traverse gear until cam gear leaver comes to the lever adjusting position at the end of mechanical chassis unit.



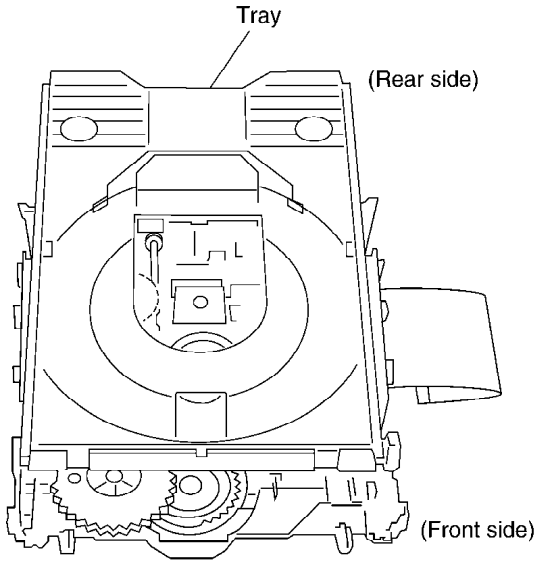
<Figure 1>

2. Check the position of convex phase on back of the tray, and that of concave phase on drive gear.



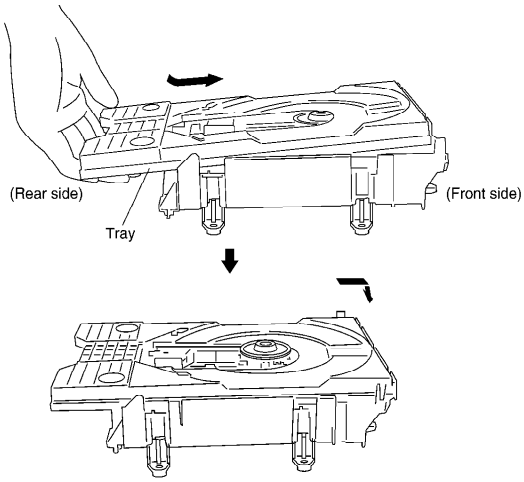
<Figure 2>

A. Place the tray on the unit from rearward.



<Figure 3>

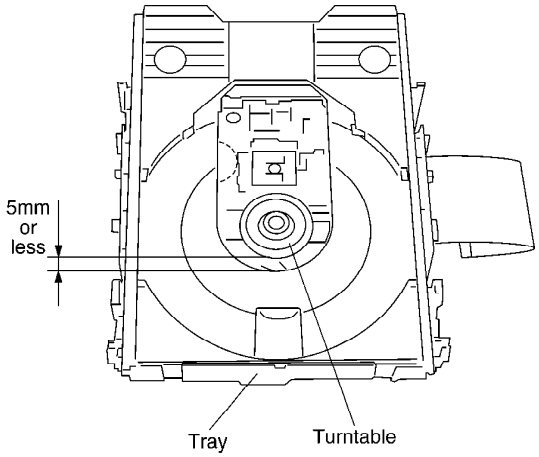
B. Inch the tray frontward until convex phase and concave phase mate.



<Figure 4>

Caution:

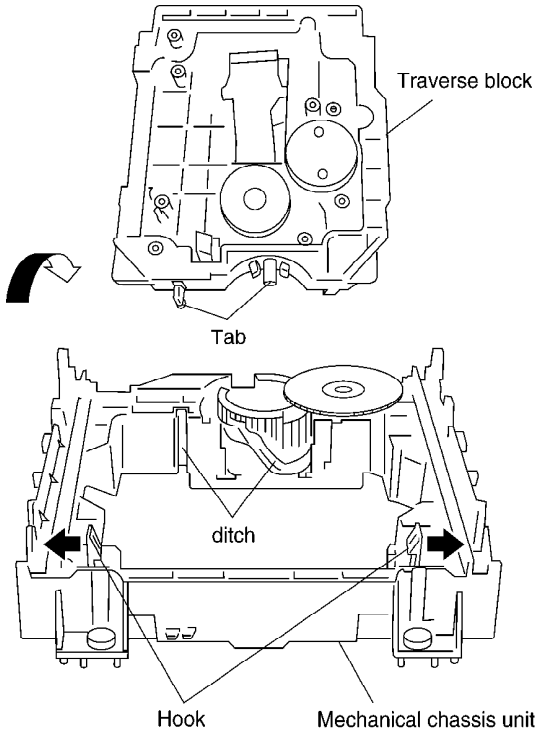
Make sure to mate convex phase and concave phase properly, so that the gap between turntable and tray becomes 5mm or less.



<Figure 5>

10.5. Traverse Block

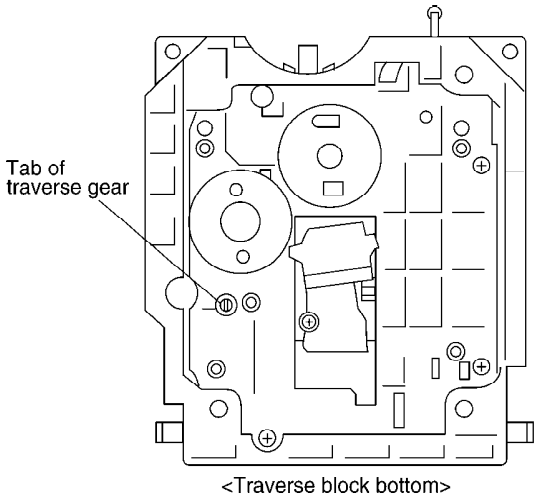
1. **Lift the traverse block while spreading the hook of the mechanical chassis unit.**
2. **Disengage the tabs from the holes of the mechanical chassis unit.**



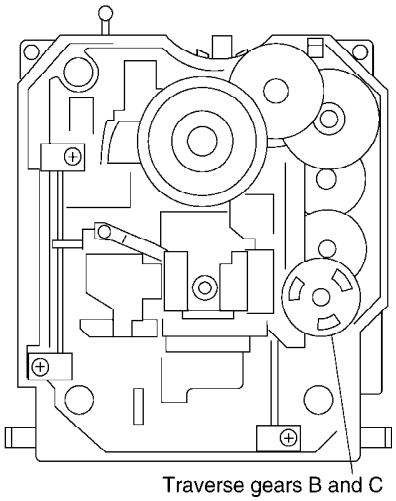
10.6. Traverse Gear

1. Disengage the tabs from the traverse gear.

2. Remove the traverse gears B and C.



<Traverse block bottom>

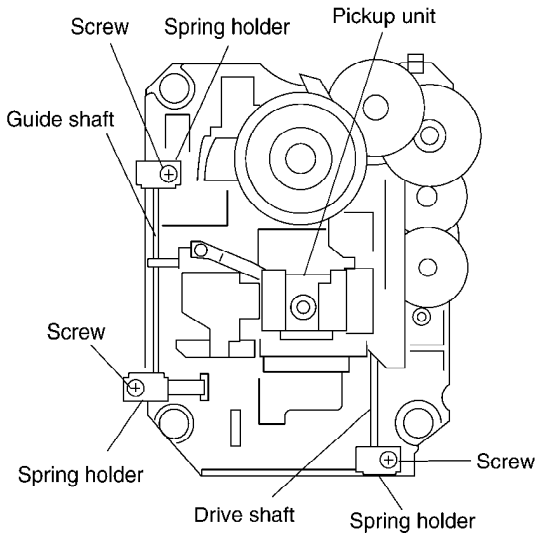


10.7. Optical Pickup Unit

1. Unscrew the screws.

2. Remove the spring holders and the springs.

3. Pull out the drive shaft and guide shaft.



10.7.1. Precautions in optical pickup replacement

The optical pickup can be damaged by static electricity from you body. Be sure to take static electricity countermeasures when working around the optical pickup. (Refer to the related page in this Manual about the countermeasures.)

1. Do not touch laser diode, actuator and their peripheries.

2. Do not use tester to check laser diode. (Laser diode can be damaged easily.)

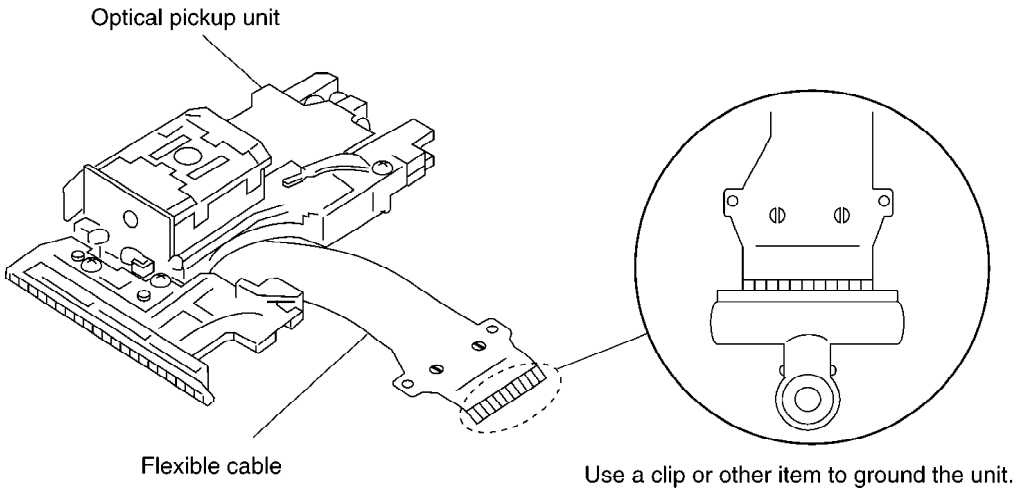
3. The use of soldering iron with anti-static feature is recommended when providing short-circuit to laser diode or when removing it.

4. Solder the land on flexible cable of optical pickup unit.

Caution

- When using the soldering iron without anti-static feature, short-circuit the flexible cable terminal with a clip before short-circuiting the land.

- After intended repair is finished, remove the solder for short-circuit of laser diode in a correct way following the procedures described in this Manual.



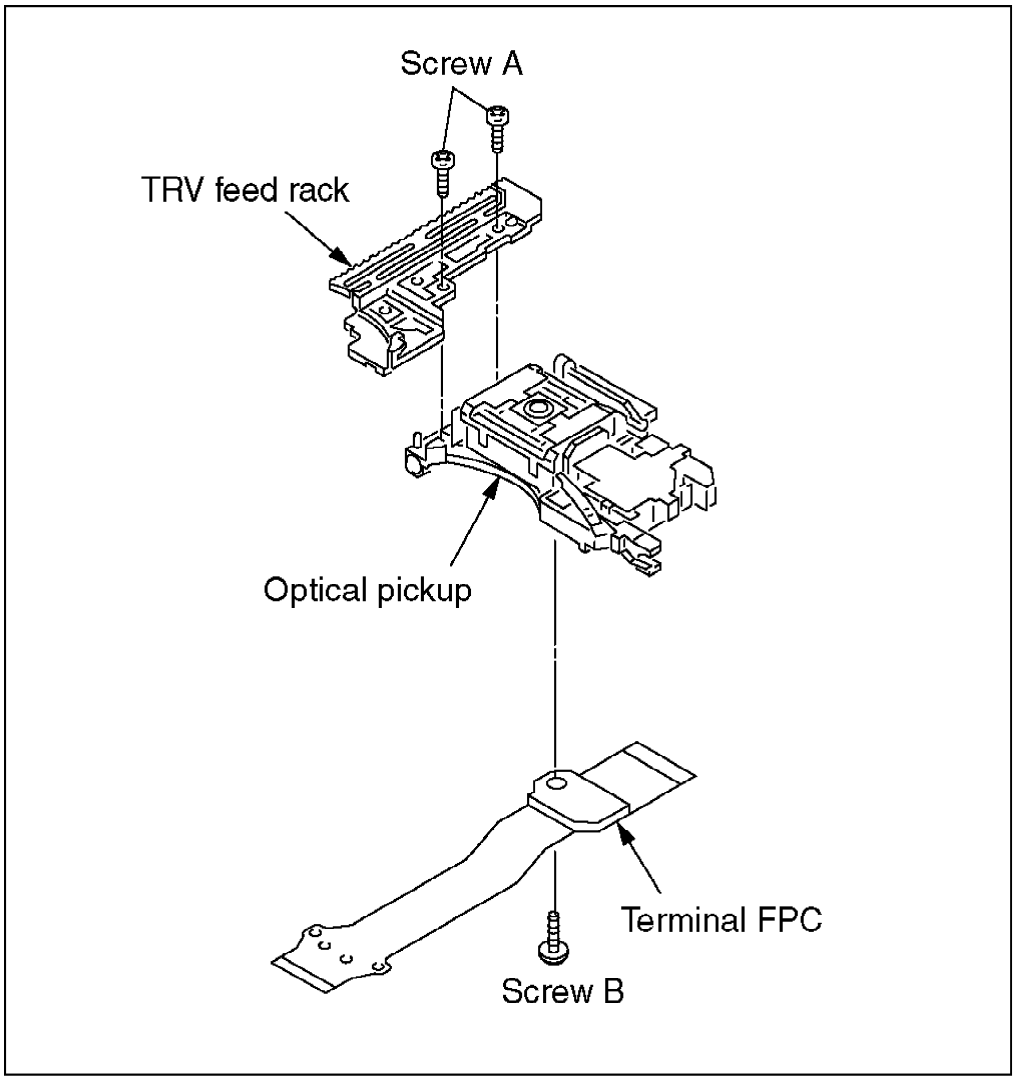
10.7.2. Disassembling the Optical Pickup Unit

1. Remove the 2 screws A and remove the TRV feed rack.

2. Remove the screw B and remove the Terminal FPC.

3. Remove the optical pickup.

Fig. 1



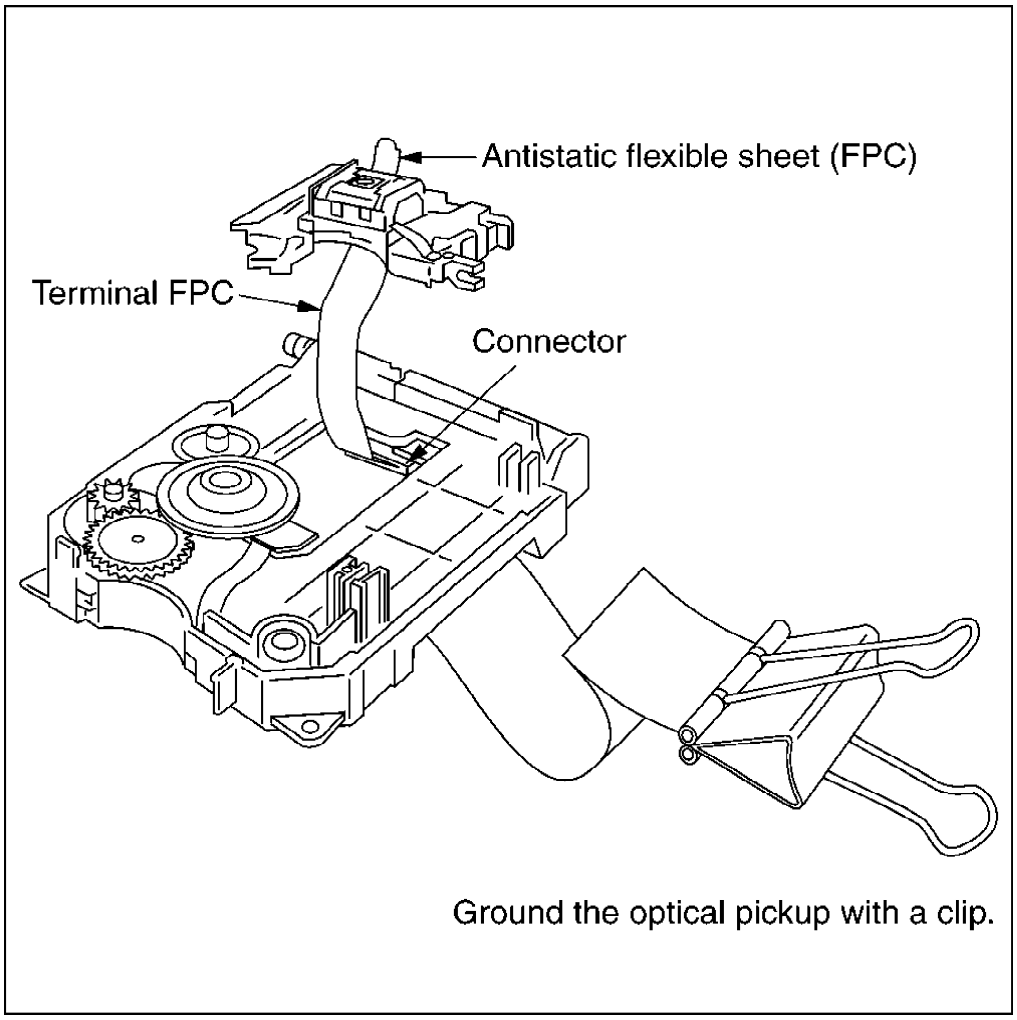
10.7.3. Cautions to Be Taken When Replacing the Optical Pickup

- An antistatic flexible sheet (FPC) is connected with the new optical pickup.
Replace the optical pickup according to the following procedure.

1. Install the Terminal FPC, TRV feed rack on the optical pickup. (See Fig. 1)

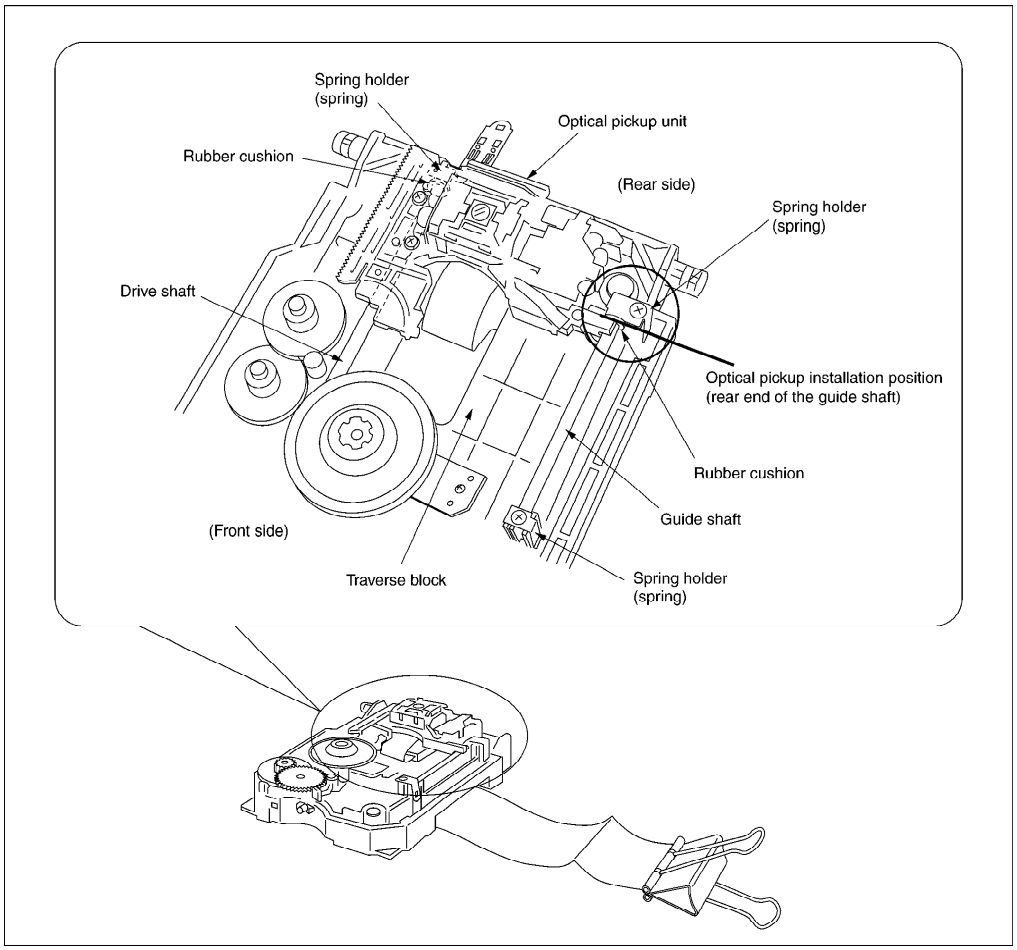
2. Install the Terminal FPC in the connector on the Terminal P.C.B..

Fig. 2



3. Install the optical pickup unit, spring, drive shaft, guide shaft, rubber cushion, and spring holder on the traverse block.

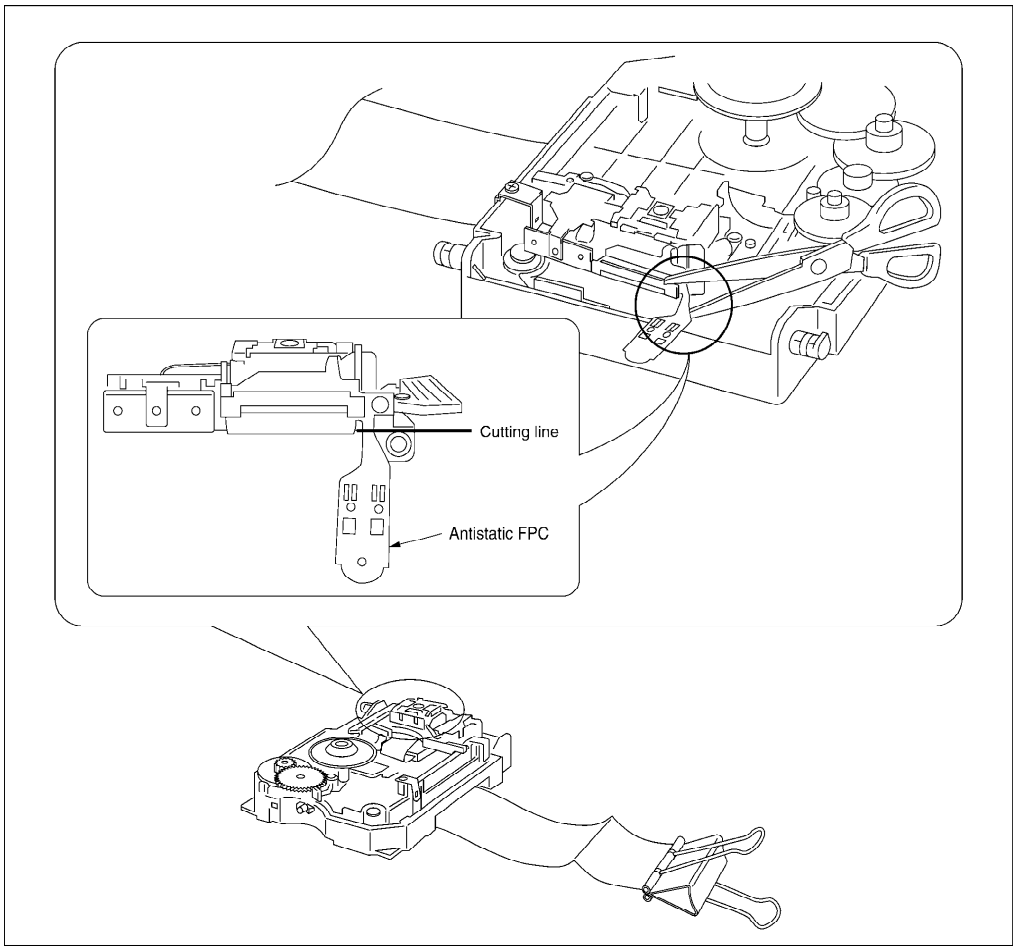
Fig. 3



Cautions to be taken when assembling the unit: Install the pickup unit so that it is located at the rear end of the guide shaft.)

4. Cut the antistatic flexible sheet for the optical pickup unit.

Fig. 4

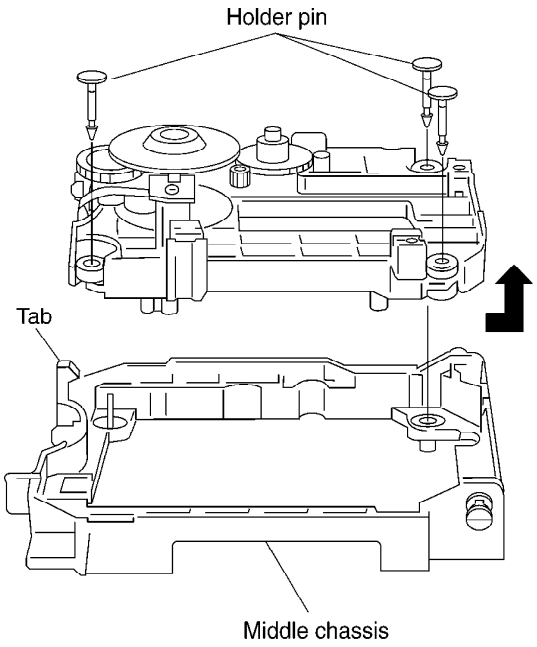


10.8. Disassembling the Middle Chassis

1. Remove the holder pins.

2. Remove the tab.

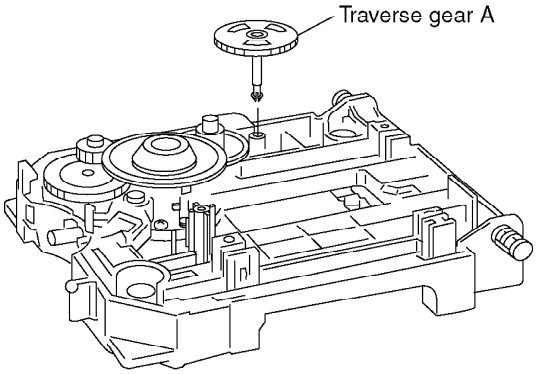
3. It lifts while pulling it in the direction of the arrow.



10.9. Disassembling the Traverse Gear A

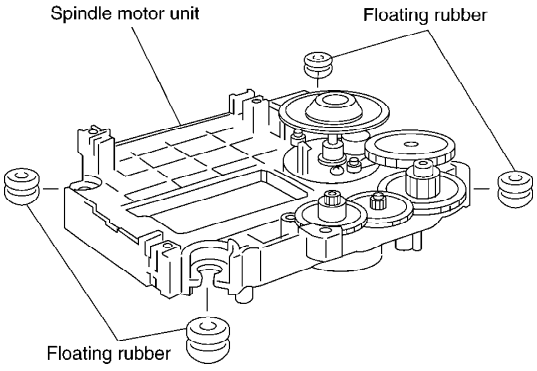
1. Unscrew the screw.

2. Remove the traverse gear A.



10.10. Disassembling the Spindle Motor Unit

1. Remove the floating rubbers.



11. ADJUSTMENT PROCEDURES

11.1. Service Tools and Equipment

Application	Name	Number
Tilt adjustment	DVD test disc	DVDT-S15 or DVDT-S01
	Hex wrench	Available on sales route.
Inspection	Extension cable (module P.C.B. to mother P.C.B.)	JGS0116
	Extension cable (module P.C.B. to mother P.C.B.)	VUC8026
Others	Screw lock	RZZ0L01
	Grease 1	RFKXGAK152
	Grease 2	RFKXPG641
	Oil (1)	RFKXGA1280
Confirmation	CD test disc	PVCD-K06 or any other commercially available disc
	VCD test disc	PVCD-K06 or any other commercially available disc
	Recovery disc	RFKZD5TR006

11.2. Important points in adjustment

11.2.1. Important points in optical adjustment

- Before starting optical adjustment, be sure to take anti-static measures.

- Optical pickup tilt adjustment is needed after replacement of the following components.

1. Optical pickup unit

2. Spindle motor unit

3. Optical pickup peripheral parts (such as rail)

Notes

Adjustment is generally unnecessary after replacing other parts of the traverse unit. However, make adjustment if there is a noticeable degradation in picture quality. Optical adjustments cannot be made inside the optical pickup. Adjustment isgenerally unnecessary after replacing the traverse unit.

11.2.2. Important points in electrical adjustment

- Follow the adjustment procedures described in this Manual.

11.3. Storing and Handling Test Discs

- Surface precision is vital for DVD test discs. Be sure to store and handle them carefully.

1. Do not place discs directly onto the workbench, etc., after use.
2. Handle discs carefully in order to maintain their flatness. Place them into their case after use and store them vertically. Store discs in a cool place where they are not exposed to direct sunlight or air from air conditioners.
3. Accurate adjustment will not be possible if the disc is warped when placed on a surface made of glass, etc. If this happens, use a new test disc to make optical adjustments.
4. If adjustment is done using a warped disc, the adjustment will be incorrect and some discs will not be playable.

11.4. Optical adjustment

11.4.1. Optical pickup tilt adjustment

Measurement point	Adjustment point	Mode	Disc
	Tangential adjustment screw Tilt adjustment screw	T01 (inner periphery) play T43 (outer periphery) play	DVDR-S15 or DVD
Measuring equipment		Adjustment value	
None (Main unit display for servicing is used.)		Adjust to the minimum jitter value.	

11.4.1.1. Adjustment procedure

1. While pressing PAUSE and OPEN/CLOSE buttons on the main unit, press "5" on the remote control unit.
2. Confirm that "J_xxx_yyy_zz" is shown on the front display.

For your information:
"yyy" and "zz" shown to the right have nothing to do with the jitter value. "yyy" is the error counter, while "zz" is the focus drive value.

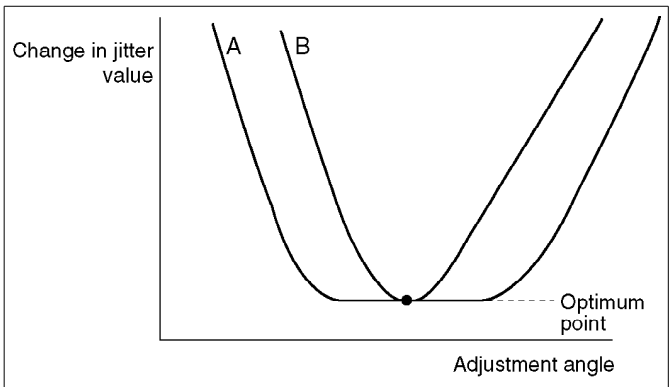
Note:
Jitter value appears on the front display.

3. Play test disc T01 (inner periphery).
4. Adjust tangential adjustment screw so that the jitter value is minimized.

5. Play test disc T43 (outer periphery).
6. Adjust tilt adjustment screw 1 so that the jitter value is minimized.
7. Play test disc T43 (outer periphery).
8. Adjust tilt adjustment screw 2 so that the jitter value is minimized.
9. Repeat adjusting tilt adjustment screws 1 and 2 alternately until the jitter value is minimized.

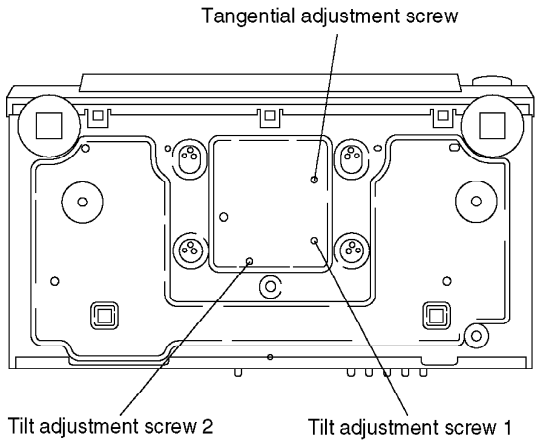
11.4.1.2. Important points

1. Make tangential adjustment first, and then make tilt adjustment.
2. Repeat adjusting two or three times to find the optimum point.
3. Finish the procedure with tilt adjustment.



Jitter value depends on the model:

1. If the jitter value changes like B, the optimum point is easy to find.
2. If the jitter value changes like A, set the optimum point near the middle.



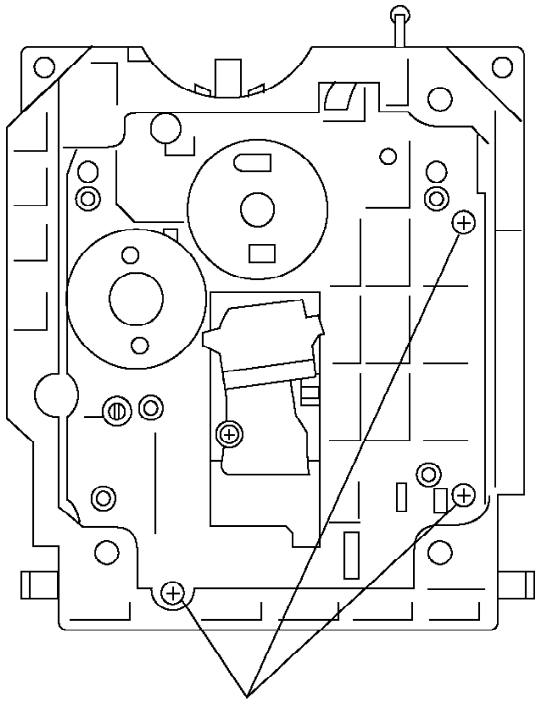
11.4.1.3. Check after adjustment

Play test disc or any other disc to make sure there is no picture degradation in the inner, middle and outer peripheries, and no audio skipping. After adjustment is finished, lock each adjustment

screw in position using screw lock.

11.4.1.4. Procedure for screw lock

1. **After adjustment, remove top cover, tray, clamper base and traverse unit in this sequence.**
2. **Lay the traverse unit upside down, and fix adjustment screw with screw lock.**
3. **After fixing, reassemble traverse unit, clamper base, tray and top cover.**



12. Abbreviations

INITIAL/LOGO		ABBREVIATIONS
A	A0~UP	ADDRESS
	ACLK	AUDIO CLOCK
	AD0~UP	ADDRESS BUS
	ADATA	AUDIO PES PACKET DATA
	ALE	ADDRESS LATCH ENABLE
	AMUTE	AUDIO MUTE
	AREQ	AUDIO PES PACKET REQUEST
	ARF	
	ASI	AUDIO RF
	ASO	SERVO AMP INVERTED INPUT
	ASYNC	SERVO AMPOUTPUT
		AUDIO WORD DISTINCTION SYNC
B	BCK	BIT CLOCK (PCM)
	BCKIN	BIT CLOCK INPUT
	BDO	BLACK DROP OUT
	BLKCK	SUB CODE BLOCK CLOCK
	BOTTOM	CAP. FOR BOTTOM HOLD
	BYP	BYPATH
	BYTCK	BYTE CLOCK
C	CAV	CONSTANT ANGULAR
	CBDO	VELOCITY
	CD	CAP. BLACK DROP OUT
	CDSCK	COMPACT DISC
	CDSRDATA	CD SERIAL DATA CLOCK
		CD SERIAL DATA
	CDRF	CD RF (EFM) SIGNAL
	CDV	COMPACT DISC-VIDEO
	CHNDATA	CHANNEL DATA
	CKSL	SYSTEM CLOCKSELECT
	CLV	CONSTANT LINEAR VELOCITY
	COFTR	CAP. OFF TRACK
	CPA	CPU ADDRESS
	CPCS	CPU CHIP SELECT
	CPDT	CPU DATA
	CPUADR	CPU ADDRESS LATCH
	CPUADT	CPU ADDRESS DATA BUS
	CPUIRQ	CPU INTERRUPT REQUEST
	CPRD	CPU READ ENABLE
	CPWR	CPU WRITE ENABLE
	CS	CHIPSELECT
	CSYNCIN	COMPOSITE SYNC IN
	CSYNCOUT	COMPOSITE SYNC OUT

INITIAL/LOGO		ABBREVIATIONS
D	DACCK	D/A CONVERTER CLOCK
	DEEMP	DEEMPHASIS BIT ON/OFF
	DEMPH	DEEMPHASIS SWITCHING
	DIG0~UP	FL DIGIT OUTPUT
	DIN	DATA INPUT
	DMSRCK	DM SERIAL DATA READ CLOCK
	DMUTE	DIGITAL MUTE CONTROL
	DO	DROP OUT
	DOUT0~UP	DATAOUTPUT
	DRF	DATA SLICE RF (BIAS)
	DRPOUT	DROP OUT SIGNAL
	DREQ	DATA REQUEST
	DRESP	DATA RESPONSE
	DSC	DIGITAL SERVO CONTROLLER
	DSLF	DATA SLICE LOOP FILTER
	DVD	DIGITAL VIDEO DISC

INITIAL/LOGO		ABBREVIATIONS
E	EC	ERROR TORQUE CONTROL
	ECR	ERROR TORQUE CONTROL REFERENCE
	ENCSEL	ENCODER SELECT
	ETMCLK	EXTERNAL M CLOCK (81MHz/ 40.5MHz)
	ETSCLK	EXTERNAL S CLOCK (54MHz)
F	FBAL	FOCUS BALANCE
	FCLK	FRAME CLOCK
	FE	FOCUS ERROR
	FFI	FOCUS ERROR AMP INVERTED INPUT
	FEO	FOCUS ERROR AMP OUTPUT
	FG	FREQUENCY GENERATOR
	FSC	FREQUENCY SUB CARRIER
	FSCK	FS (384 OVER SAMPLING) CLOCK
G	GND	COMMON GROUNDING (EARTH)
H	HA0~UP	HOST ADDRESS
	HD0~UP	HOST DATA
	HINT	HOST INTERRUPT
	HRXW	HOST READ/WRITE

INITIAL/LOGO		ABBREVIATIONS
I	IECOUT	IEC958 FORMAT DATA OUTPUT
	IPFRAG	INTERPOLATION FLAG
	IREF	I (CURRENT) REFERENCE
	ISEL	INTERFACE MODE SELECT
L	LDON	LASER DIODE CONTROL
	LPC	LASER POWER CONTROL
	LRCK	L CH/R CH DISTINCTION CLOCK
M	MA0~UP	MEMORY ADDRESS
	MCK	MEMORY CLOCK
	MCKI	MEMORY CLOCK INPUT
	MCLK	MEMORY SERIAL COMMAND CLOCK
	MDATA	MEMORY SERIAL COMMAND DATA
	MDQ0~UP	MEMORY DATA INPUT/OUTPUT
	MDQM	MEMORY DATA I/O MASK
	MLD	MEMORYSERIAL COMMAND LOAD
	MPEG	MOVING PICTURE EXPERTS GROUP
O	ODC	OPTICAL DISC CONTROLLER
	OFTR	OFF TRACKING
	OSCI	OSCILLATOR INPUT
	OSCO	OSCILLATOR OUTPUT
	OSD	ON SCREEN DISPLAY
P	P1~UP	PORT
	PCD	CD TRACKING PHASE DIFFERENCE
	PCK	PLL CLOCK
	PDVD	DVD TRACKING PHASE DIFFERENCE
	PEAK	CAP. FOR PEAK HOLD
	PLLCLK / PLLOK	CHANNEL PLL CLOCK PLL LOCK
	PWMCTL	PWM OUTPUT CONTROL
	PWMDA	PULSE WAVE MOTOR DRIVEA
	PWMOA, B	PULSE WAVE MOTOR OUT A, B

INITIAL/LOGO		ABBREVIATIONS
R	RE	READ ENABLE
	RFENV	RF ENVELOPE
	RFO	RF PHASE DIFFERENCE
	RS	OUTPUT
	RSEL	(CD-ROM) REGISTER SELECT
	RST	RF POLARITY SELECT
	RSV	RESET
		RESERVE
S	SBI0, 1	SERIAL DATA INPUT
	SBO0	SERIAL DATA OUTPUT
	SBT0, 1	SERIAL CLOCK
	SCK	SERIAL DATA CLOCK
	SCKR	AUDIO SERIAL CLOCK
	SCL	RECEIVER
	SCLK	SERIAL CLOCK
	SDA	SERIAL CLOCK
	SEG0~UP	SERIAL DATA
	SELCLK	FL SEGMENT OUTPUT
	SEN	SELECTCLOCK
	SIN1, 2	SERIAL PORT ENABLE
	SOUT1, 2	SERIAL DATA IN
	SPDI	SERIAL DATA OUT
	SPDO	SERIAL PORT DATA INPUT
	SPEN	SERIAL PORT DATA OUTPUT
	SPRCLK	SERIAL PORT R/W ENABLE
	SPWCLK	SERIAL PORT READ CLOCK
	SQCK	SERIAL PORT WRITE CLOCK
	SQCX	SUB CODE Q CLOCK
	SRDATA	SUBCODE Q DATA READ
	SRMADR	CLOCK
	SRMDT0~7	SERIAL DATA
		SRAM ADDRESS BUS
	SS	SRAM DATA BUS 0~7
	STAT	START/STOP
	STCLK	STATUS
	STD0~UP	STREAM DATA CLOCK
	STENABLE	STREAM DATA
		STREAM DATA INPUT ENABLE
	STSEL	STREAM DATA POLARITY
	STVALID	SELECT
	SUBC	STREAM DATAVALIDITY
	SBCK	SUB CODE SERIAL
	SUBQ	SUB CODE CLOCK
	SYSCLK	SUB CODE Q DATA

	SYSCLK	SYSTEM CLOCK

INITIAL/LOGO		ABBREVIATIONS
T	TE	TRACKING ERROR
	TIBAL	BALANCE CONTROL
	TID	BALANCE OUTPUT 1
	TIN	BALANCE INPUT
	TIP	BALANCE INPUT
	TIS	BALANCE OUTPUT 2
	TPSN	OP AMP INPUT
	TPSO	OP AMP OUTPUT
	TPSP	OP AMP INVERTED INPUT
	TRCRS	TRACK CROSSSIGNAL
	TRON	TRACKING ON
	TRSON	TRAVERSE SERVO ON

INITIAL/LOGO		ABBREVIATIONS
V	VBLANK	V BLANKING
	VCC	COLLECTOR POWER SUPPLY VOLTAGE
	VCDCONT	VIDEO CD CONTROL (TRACKING BALANCE)
	VDD	DRAIN POWER SUPPLY VOLTAGE
	VFB	VIDEO FEED BACK
	VREF	VOLTAGE REFERENCE
	VSS	SOURCE POWER SUPPLYVOLTAGE
W	WAIT	BUS CYCLE WAIT
	WDCK	WORD CLOCK
	WEH	WRITE ENABLE HIGH
	WSR	WORD SELECT RECEIVER

INITIAL/LOGO		ABBREVIATIONS
X	X	X' TAL
	XALE	X ADDRESS LATCH ENABLE
	XAREQ	X AUDIO DATA REQUEST
	XCDROM	X CD ROM CHIP SELECT
	XCS	X CHIP SELECT
	XCSYNC	X COMPOSITE SYNC
	XDS	X DATA STROBE
	XHSYNCO	X HORIZONTAL SYNC OUTPUT
	XHINT	XH INTERRUPTREQUEST
	XI	X' TAL OSCILLATOR INPUT
	XINT	X INTERRUPT
	XMW	X MEMORY WRITE ENABLE
	XO	X' TAL OSCILLATOR OUTPUT
	XRE	X READ ENABLE
	XSRMCE	X SRAM CHIP ENABLE
	XSRMOE	X SRAM OUTPUT ENABLE
	XSRMWE	X SRAM WRITE ENABLE
	XVCS	X V-DEC CHIPSELECT
	XVDS	X V-DEC CONTROL BUS
	XVSYNCO	STROBE X VERTICAL SYNC OUTPUT

13. Voltage Chart

13.1. Module P.C.B.

13.2. Mother P.C.B.

13.3. FRONT 2 P.C.B.

13.4. Terminal P.C.B.

14. BLOCK DIAGRAM

14.1. OVERALL BLOCK DIAGRAM

14.2. POWER BLOCK DIAGRAM

14.3. SERVO BLOCK DIAGRAM

14.4. VIDEO BLOCK DIAGRAM

14.5. AUDIO BLOCK DIAGRAM

15. SCHEMATIC DIAGRAM

15.1. INTERCONNECTION SCHEMATIC DIAGRAM

15.2. POWER SECTION (MOTHER P.C.B. (1/4)) SCHEMATIC DIAGRAM

15.3. VIDEO-OUT SECTION (MOTHER P.C.B. (2/4)) SCHEMATIC DIAGRAM

15.4. AUDIO-OUT SECTION (MOTHER P.C.B. (3/4)) SCHEMATIC DIAGRAM

15.5. OPERATION & FL SECTION (MOTHER P.C.B. (4/4)) SCHEMATIC DIAGRAM

15.6. NODC SECTION (MODULE P.C.B. (1/6)) SCHEMATIC DIAGRAM

15.7. AVDEC SECTION (MODULE P.C.B. (2/6)) SCHEMATIC DIAGRAM

15.8. VIDEO-DAC SECTION (MODULE P.C.B. (3/6)) SCHEMATIC DIAGRAM

15.9. AUDIO-DAC SECTION (MODULE P.C.B. (4/6)) SCHEMATIC DIAGRAM

15.10. WMA SECTION (MODULE P.C.B. (5/6)) SCHEMATIC DIAGRAM

15.11. CPU SECTION (MODULE P.C.B. (6/6)) SCHEMATIC DIAGRAM

15.12. TERMINAL SCHEMATIC DIAGRAM

15.13. FRONT 1 AND FRONT 2 SCHEMATIC DIAGRAM

16. PRINT CIRCUIT BOARD

16.1. MOTHER P.C.B.

16.2. MOTHER P.C.B. AND MODULE P.C.B. ADDRESS INFORMATION

16.3. MODULE P.C.B. (1/2) (COMPONENT SIDE)

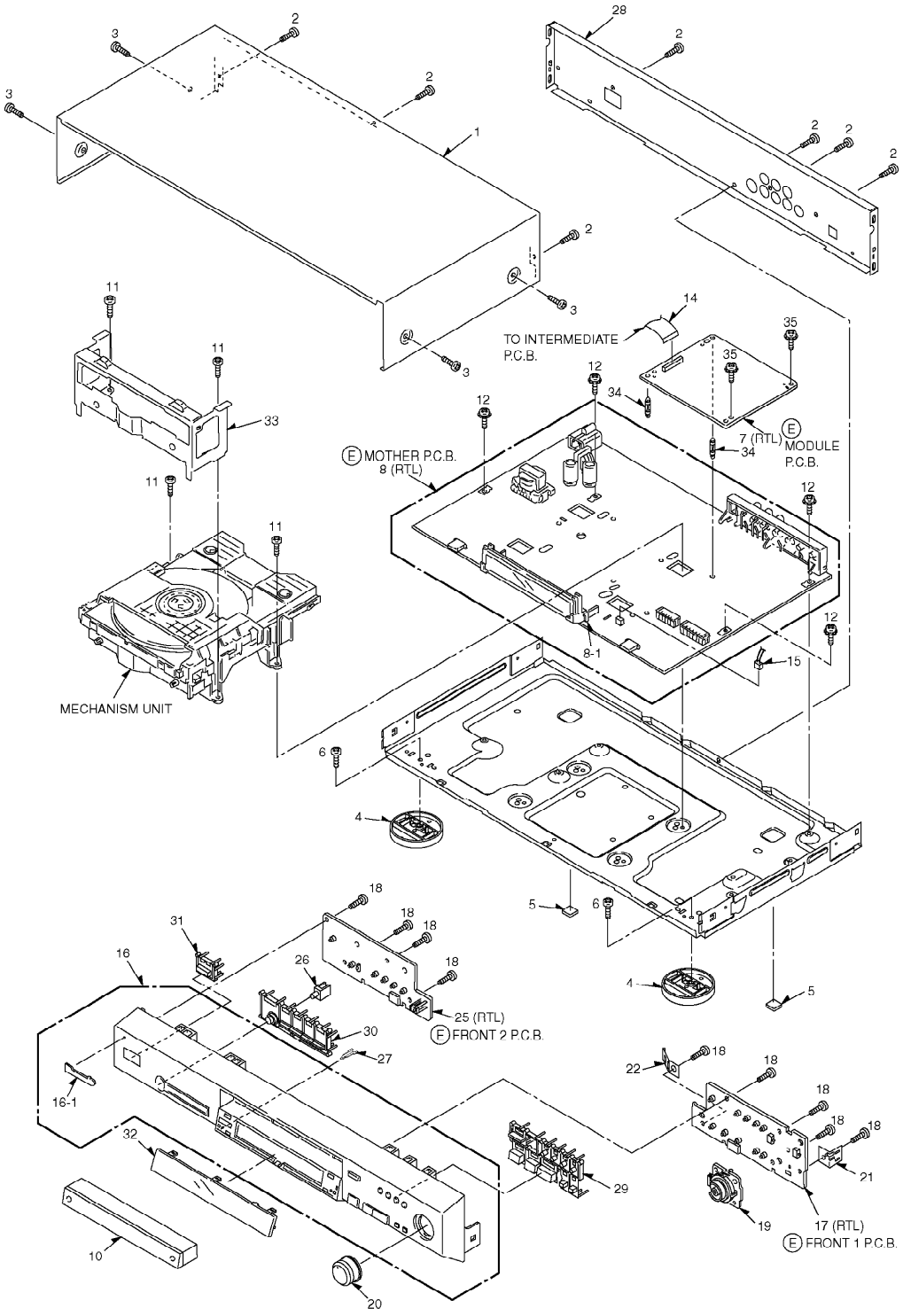
16.4. MODULE P.C.B. (2/2) (FOIL SIDE)

16.5. FRONT 1 AND FRONT 2 P.C.B.

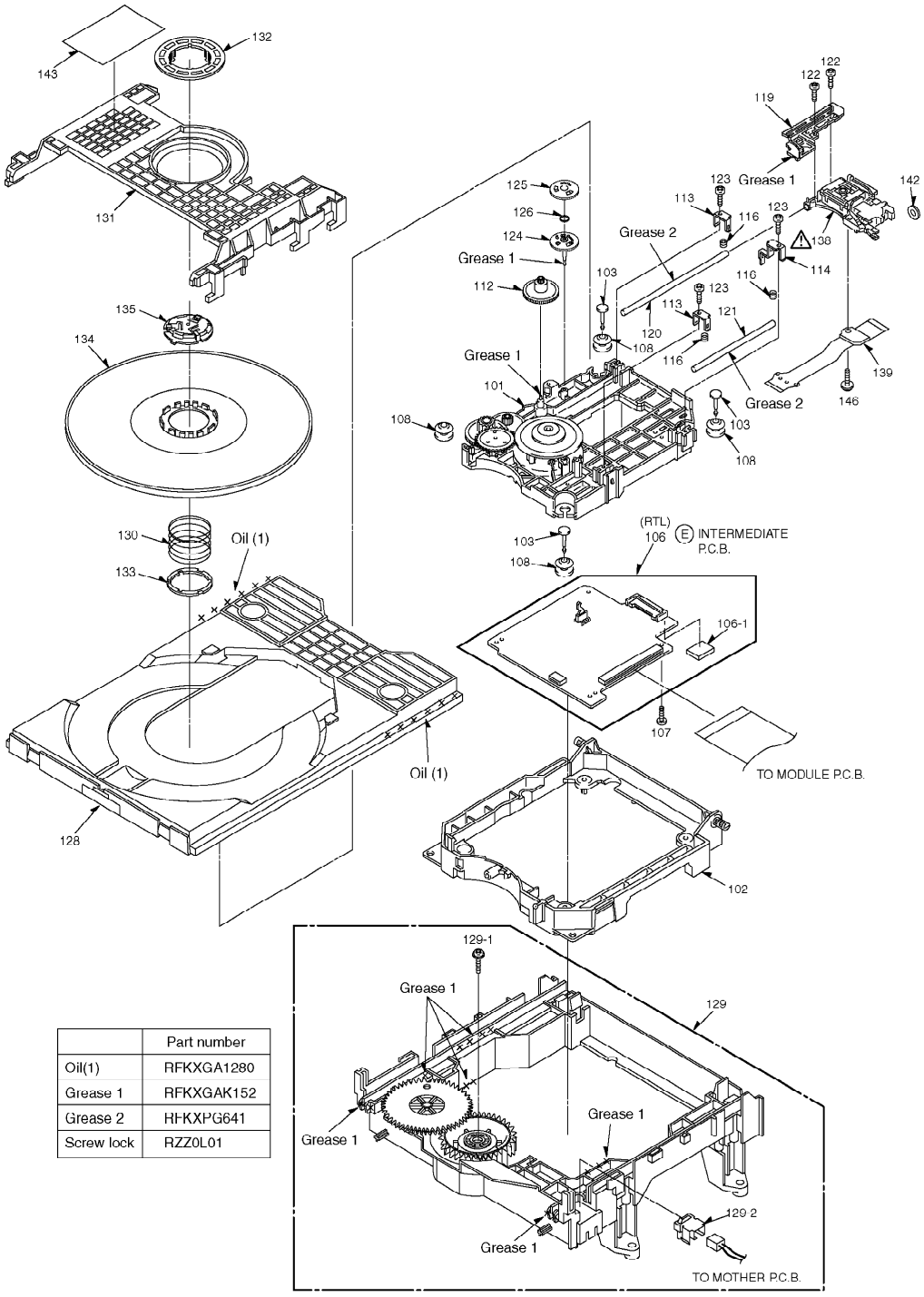
16.6. TERMINAL P.C.B.

17. EXPLODED VIEWS

17.1. Casing Parts & Mechanism Section Exploded View

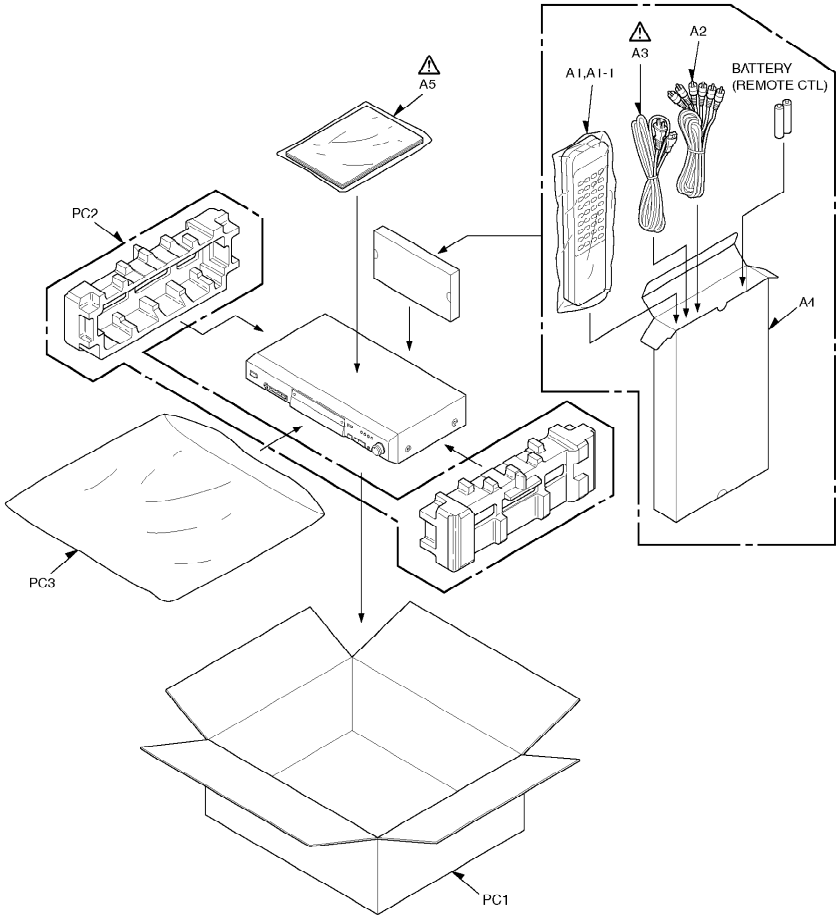


17.2. Mechanism Section Exploded View



	Part number
Oil(1)	RFKXGA1280
Grease 1	RFKXGAK152
Grease 2	RHKXPG641
Screw lock	RZZ0L01

17.3. Packing & Accessories Section Exploded View



18. REPLACEMENT PARTS LIST

Notes:
***Important safety notice:**
Components identified by ⚠ mark have special characteristics important for safety. Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.
When replacing any of components, be sure to use only manufactures specified parts shown in the parts list.
***Warning: This product uses a laser diode. Refer to caution statements.**
***ACHTUNG: Die lasereinheit nicht zerlegen. Die lasereinheit darf nur gegen enic vom hersteller spezifizierte einheit ausgetauscht werden.**
***Capacity values are in microfarads (μ F) unless specified otherwise, P=Pico-farads (pF), F= Farads (F).**
***Resistance values are in ohms, unless specified otherwise, 1K=1,000 (OHM), 1M=1,000k (OHM).**
***The marking (RTL) indicates that the retention time is limited for this item. After the discontinuation of this assembly in production, it will no longer be available.**
***"<IA>-<IB>",marks in Remarks indicate languages of instruction manuals.[<IA>:English, <IB>: Canadian French.]**
***All parts that are supplied by S.P.C..**

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
1	CKM0001-K	TOP COVER	1	(K)
1	CKM0001-S	TOP PANEL	1	(S)
2	VHD0690	SCREW	7	
3	VHD1041	SCREW	4	(K)
3	VHD1094	SCREW	4	(S)
4	RYQ0349-K	LEG	2	
5	RKA0137-K	FOOT RUBBER	2	
6	XTV3+8G	SCREW	2	
7	REP3303C	MODULE P.C.B.	1	(RTL)
8	REP3304C	MOTHER P.C.B.	1	(RTL)
8-1	CMN0001	FL HOLDER	1	
10	CGK0001-K	TRAY TOP	1	(K)
10	CGK0001-S	TRAY TOP	1	(S)
11	XTV3+8J	SCREW	4	
12	RHDC0001	SCREW	4	
14	REZ1355	FLEXIBLE CABLE(50P)	1	
15	REX1057	CONNECTOR CABLE(2P)	1	
16	CYP0003-K	FRONT PANEL ASS'Y 2	1	(K)
16	CYP0003-S	FRONT PANEL ASS'Y2	1	(S)
16-1	VGB0298	PANASONIC BADGE	1	
17	CEP0005AA	FRONT1 P.C.B.	1	(RTL)
18	XTBS26+10J	SCREW	9	
19	RXQ0755	SHUTTLE BASE ASS'Y	1	
20	CGW0001-K	SHUTTLE KNOB	1	(K)
20	CGW0001-S	SHUTTLE KNOB	1	(S)
21	CMC0001	EARTH PLATE A	1	
22	CMC0002	EARTH PLATE B	1	
25	CEP0005AB	FRONT 2 P.C.B.	1	(RTL)
26	CGL0002#1	LIGHTING PIECE B	1	
27	CGL0001#1	LIGHTING PIECE A	1	
28	CGR0001A-A	REAR PANEL	1	
29	CGU0001-K#1	MAIN BUTTON	1	(K)
29	CGU0001-S#1	MAIN BUTTON	1	(S)
30	CGU0002-K#1	FUNCTION BUTTON	1	(K)
30	CGU0002-S#1	FUNCTION BUTTON	1	(S)
31	CGU0003-K#1	POWER BUTTON	1	(K)
31	CGU0003-S#1	POWER BUTTON	1	(S)
32	CKW0001-Q#1	FL WINDOW	1	
33	CMA0001	FRONT METAL	1	
34	RMR1359-W#1	PCB SUPPORT	2	
35	STN3X6	SCREW	1	
101	RXQ0745B	SPINDLE MOTOR ASS'Y	1	
102	RMR1376-K	MIDDLE CHASSIS	1	
103	RMS0712	FIXED PIN	3	
106	REP3091B-N	INTERMEDIATE P.C.B.	1	(RTL)
106-1	RMG0558-K	PCB RUBBER	1	
107	RHD20060	SCREW	1	
108	RMG0545-A	FLOATING RUBBER	4	
112	RDG0499#1	TRAVERSE GEAR(A)	1	
113	RMC0415	ADJUST SPRING HOLDER1	2	
114	RMC0416	ADJUST SPRING HOLDER2	1	
116	RMEC0320	ADJUST SPRING	3	
119	RMM0234	TRAVERSE DRIVE RACK	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
120	RMSC0710	DRIVE SHAFT	1	
121	RMSC0711	GUIDE SHAFT	1	
122	RHD17036	SCREW	2	
123	VHD1224	SCREW	3	
124	RDG0500	TRAVERSE GEAR(B)	1	
125	RDG0501	TRAVERSE GEAR(C)	1	
126	RMEC0319	TRAVERSE GEAR SPRING	1	
128	RGQ0280-K3	TRAY	1	
129	RXQ0748	MECHA CHASSIS ASS'Y	1	
129-1	XTW3+12S	SCREW	1	
129-2	RSH1A049-U	OPEN SWITCH	1	K0F111E00093
130	RME0318	CLAMPER SPRING	1	
131	RMR1317-K	CLAMP PLATE	1	
132	RMR1318-X	FIXTURE	1	
133	RMR1321-X	SPRING HOLDER	1	
134	RXQ0724	CLAMPER ASS'Y	1	
135	RXQ0729	MAGNET HOLDER ASS'Y	1	
138	RAF3022A-1	OPTICAL PICK-UP	1	⚠
139	RJB2308A	INTERFACE FPC	1	
142	RMG0561-T	CUSHION RUBBER	1	
143	RQLS0233	LASER CAUTION LABEL	1	
146	RHD14095	SCREW	1	
A1	N2QAJB000043	REMOTE CONTROL ASS'Y	1	
A1-1	HTR028352002	BATTERY COVER	1	
A2	JAC3315N	A/V CORD	1	
A3	RJA0065-A	AC CORD	1	K2CB2CB00006 ⚠
A4	RPQCF0003	ACCESSORY CASE	1	
A5	RQT6236-P	OPERATING INSTRUCTIONS	1	<IA> ⚠
A5	RQT6237-C	OPERATING INSTRUCTIONS	1	(PC)<IB> ⚠
C1001,02	ECQU2A683MLC	0.068U	2	⚠
C1003	VCK0299E102	CERAMIC CAPACITOR	1	F1BAF1020005 ⚠
C1005	VCK0299E222	CERAMIC CAPACITOR	1	F1BAF2220006 ⚠
C1011,12	ECA2EHG330B	250V 33U	2	
C1021	VCK0266K471T	CERAMIC CAPACITOR	1	F1B2H4710002
C1031	VCK0266K182T	CERAMIC CAPACITOR	1	F1B2H1820001
C1041	ECQB1H223JF4	50V 0.022U	1	
C1051	ECQB1H104JF4	50V 0.1U	1	
C1052	ECQB1H683JF4	50V 0.068U	1	
C1053	ECQB1H104JF4	50V 0.1U	1	
C1101	ECQV1H104JL2	50V 0.1U	1	
C1102	ECQB1H223JF4	50V 0.022U	1	
C1111	VCEA1AJH102B	10V 1000U	1	F2A1A102A013
C1112	ECA1CM102	16V 1000U	1	
C1115	ECUV1E104ZFV	25V 0.1U	1	F1H1E104A030
C1116	VCEA1AJC221B	10V 220U	1	F2A1A2210005
C1117	ECA0JM102	6.3V 1000U	1	ECA0JM102B
C1121	VCEA1AJH102B	10V 1000U	1	F2A1A102A013
C1125	ECUV1E104ZFV	25V 0.1U	1	F1H1E104A030
C1126	ECUV1H102KBV	50V 1000P	1	ECJ1VB1H102K
C1127	ECA0JM102	6.3V 1000U	1	ECA0JM102B
C1131	ECA1HM330B	50V 33U	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C1141	ECA1HM330B	50V 33U	1	
C1142	ECUV1E104ZFV	25V 0.1U	1	F1H1E104A030
C1143	ECA1CM100B	16V 10U	1	
C1151	VCEA1EJH271B	25V 270U	1	F2A1E2710001
C1153	ECA1EM331B	25V 330U	1	
C1154	ECA1CM221	16V 220U	1	
C1161	VCEA1HJH560B	50V 560	1	F2A1H5600002
C1171	VCEA1AJH181B	10V 180U	1	F2A1A1810002
C2001	F2G0J331A015	6.3V 330U	1	
C2002	ECEV0GA101SR	4V 100P	1	
C2003-11	ECUX1C104ZFV	16V 0.1U	9	
C2015	ECUX1C104ZFV	16V 0.1U	1	
C2021	ECUV1H822KBV	50V 8200P	1	
C2022	ECUV1C393KBV	16V 0.039U	1	F1H1C393A065
C2023,24	ECUV1H681KBV	50V 680P	2	
C2025,26	ECUV1C473KBV	16V 0.047U	2	ECJ1VB1C473K
C2027	ECUV1H332KBV	50V 3300P	1	ECJ1VB1H332K
C2028,29	ECUV1H152KBV	50V 1500P	2	ECJ1VB1H152K
C2030	ECUV1H471KBV	50V 470P	1	ECJ1VB1H471K
C2031	ECUV1H332KBV	50V 3300P	1	ECJ1VB1H332K
C2032	ECUV1C473KBV	16V 0.047U	1	ECJ1VB1C473K
C2033	ECUV1H332KBV	50V 3300P	1	ECJ1VB1H332K
C2034	ECUV1C104KBV	16V 0.1U	1	ECJ1VB1C104K
C2035	ECUV1C473KBV	16V 0.047U	1	ECJ1VB1C473K
C2036	ECUV1H332KBV	50V 3300P	1	ECJ1VB1H332K
C2037	ECUV1H102KBV	50V 1000P	1	ECJ1VB1H102K
C2038	ECUV1A474KBV	10V 0.47U	1	F1H1A474A025
C2039	ECUX1H103KBV	50V 0.01U	1	
C2041	F1J1A2250007	10V 2.2U	1	
C2042,43	ECUV1C104KBV	16V 0.1U	2	ECJ1VB1C104K
C2044	ECUX1C104ZFV	16V 0.1U	1	
C2045	ECUV1H101JCV	50V 100P	1	ECJ1VC1H101J
C2046	ECUVNC333KBV	16V 0.033U	1	F1H1C333A071
C2047	ECUV1C104KBV	16V 0.1U	1	ECJ1VB1C104K
C2048	ECUV1H332KBV	50V 3300P	1	ECJ1VB1H332K
C2051	ECUX1H103KBV	50V 0.01U	1	
C2052	ECUV1H102KBV	50V 1000P	1	ECJ1VB1H102K
C2061	RCST1AY106RC	10V 10U	1	F3F1A1060002
C2062-64	ECUX1C104ZFV	16V 0.1U	3	
C2501	EEVFC0J221P	6.3V 220U	1	
C2502	ECEV1CA101WP	16V 100U	1	
C2503	ECEV1CA220WR	16V 220U	1	
C2504-08	ECUX1C104ZFV	16V 0.1U	5	
C2509	EEVFC1C100R	16V 10U	1	
C2511-13	ECUX1C104ZFV	16V 0.1U	3	
C3001	F2G0J331A015	6.3V 330U	1	
C3002	EEVFC0J221P	6.3V 220U	1	
C3004	ECUV1A105ZFV	10V 1U	1	F1H1A1050002
C3005,06	ECUX1C104ZFV	16V 0.1U	2	
C3007,08	ECUV1A105ZFV	10V 1U	2	F1H1A1050002
C3009-11	ECUX1C104ZFV	16V 0.1U	3	
C3012,13	ECUV1A105ZFV	10V 1U	2	F1H1A1050002
C3014,15	ECUX1C104ZFV	16V 0.1U	2	
C3016	ECUV1A105ZFV	10V 1U	1	F1H1A1050002

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C3017,18	ECUX1C104ZFV	16V 0.1U	2	
C3019,20	ECUV1A105ZFV	10V 1U	2	F1H1A1050002
C3021-23	ECUX1C104ZFV	16V 0.1U	3	
C3024	ECUV1A105ZFV	10V 1U	1	F1H1A1050002
C3025	ECUX1C104ZFV	16V 0.1U	1	
C3026	ECUV1A105ZFV	10V 1U	1	F1H1A1050002
C3027-29	ECUX1C104ZFV	16V 0.1U	3	
C3030	ECUV1A105ZFV	10V 1U	1	F1H1A1050002
C3031-35	ECUX1C104ZFV	16V 0.1U	5	
C3036	ECUV1H220JCV	50V 22P	1	ECJ1VC1H220J
C3041-45	ECUX1C104ZFV	16V 0.1U	5	
C3060-64	ECUX1C104ZFV	16V 0.1U	5	
C3065	ECUV1A105ZFV	10V 1U	1	F1H1A1050002
C3066	ECUX1C104ZFV	16V 0.1U	1	
C3080	F2G0J331A015	6.3V 330U	1	
C3081,82	ECUX1C104ZFV	16V 0.1U	2	
C3083-86	ECUV0J105KBV	6.3V 1U	4	F1H0J1050013
C3087-89	ECUX1C104ZFV	16V 0.1U	3	
C3209,10	ECUX1C104ZFV	16V 0.1U	2	
C3215	ECUX1C104ZFV	16V 0.1U	1	
C3501	ECA0JM221B	6.3V 220U	1	
C3502,03	ECUV1H103ZFV	50V 0.01U	2	
C3504	ECUX1H103KBV	50V 0.01U	1	
C3505	ECEA1CKA470	16V 47U	1	
C3507,08	ECEA1CKA470	16V 47U	2	
C3509	ECA0JM102	6.3V 1000U	1	ECA0JM102B
C3510	ECEA0JKS101	6.3V 100U	1	
C3511	ECA0JM102	6.3V 1000U	1	ECA0JM102B
C3512	ECEA0JKS101	6.3V 100U	1	
C3515,16	ECA0JM331B	6.3V 330U	2	
C3520	ECUV1H101JCV	50V 100P	1	ECJ1VC1H101J
C3532	ECUX1H103KBV	50V 0.01U	1	
C3533,34	ECUV1H103ZFV	50V 0.01U	2	
C4001,02	EEVHB0J330R	6.3V 33U	2	
C4003-15	ECUX1C104ZFV	16V 0.1U	13	
C4021	ECUV0J105KBV	6.3V 1U	1	F1H0J1050013
C4022	ECUV1H103ZFV	50V 0.01U	1	
C4023	ECUV0J105KBV	6.3V 1U	1	F1H0J1050013
C4031	ECUX1C104ZFV	16V 0.1U	1	
C4041	ECUX1C104ZFV	16V 0.1U	1	
C4051	ECUX1C104ZFV	16V 0.1U	1	
C4061	ECUX1C104ZFV	16V 0.1U	1	
C4201	F2G0J331A015	6.3V 330U	1	
C4202	VCS1AS106R	10V 10U	1	
C4206	F2G0J330A015	6.3V 33U	1	
C4207-10	ECUX1C104ZFV	16V 0.1U	4	
C4218	ECUX1C104ZFV	16V 0.1U	1	
C4301	ECA0JM102	6.3V 1000U	1	ECA0JM102B
C4302,03	ECA1EM221	25V 220U	2	
C4311	ECA1CAK470XB	16V 47U	1	
C4312	ECUV1H101JCV	50V 100P	1	ECJ1VC1H101J
C4313,14	ECUV1E104ZFV	25V 0.1U	2	F1H1E104A030
C4321	ECA1CAK470XB	16V 47U	1	
C4322	ECUV1H101JCV	50V 100P	1	ECJ1VC1H101J

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C4381	ECUV1C223KBV	16V 0.022U	1	ECJ1VB1C223K
C4382,83	ECUV1E104ZFV	25V 0.1U	2	F1H1E104A030
C4385	ECUV1C223KBV	16V 0.022U	1	ECJ1VB1C223K
C4391	ECUV1E104ZFV	25V 0.1U	1	F1H1E104A030
C4401-07	ECUV1E104ZFV	25V 0.1U	7	F1H1E104A030
C4411	ECA1CAK470XB	16V 47U	1	
C4412	ECUX1H102JCV	50V 1000P	1	
C4421	ECA1CAK470XB	16V 47U	1	
C4422	ECUX1H102JCV	50V 1000P	1	
C4481	ECA1ANK470XB	10V 47U	1	
C4482	ECUX1H102JCV	50V 1000P	1	
C4491	ECEA1HKA4R7B	50V 4.7U	1	
C4492	ECUV1E104ZFV	25V 0.1U	1	F1H1E104A030
C5201,02	EEVHB1C100R	16V 10U	2	
C5203,04	ECUX1C104ZFV	16V 0.1U	2	
C5205-08	ECUX1H102JCV	50V 1000P	4	
C5211	EEVHB0J470R	6.3V 47U	1	
C5215	EEVHB0J470R	6.3V 47U	1	
C5221	ECUX1C104ZFV	16V 0.1U	1	
C5223	ECUX1C104ZFV	16V 0.1U	1	
C5224,25	ECUV1C104KBV	16V 0.1U	2	ECUZ1C104KBV
C5231	ECUV1H101JCV	50V 100P	1	ECJ1VC1H101J
C5232,33	ECUX1C104ZFV	16V 0.1U	2	
C5234	ECUV1H222KBV	50V 2200P	1	ECJ1VB1H222K
C5235	ECUV1H391JCV	50V 390P	1	F1H1H391A004
C5236	ECUX1H102JCV	50V 1000P	1	
C5237	ECUV1C104KBV	16V 0.1U	1	ECUZ1C104KBV
C5238	ECUV1A224KBV	10V 0.22U	1	F1H1A224A001
C5239	ECUV1C104KBV	16V 0.1U	1	ECUZ1C104KBV
C5240	ECUV1H561JCV	50V 560P	1	ECJ1VC1H561J
C5242	ECUV1H472KBV	50V 4700P	1	ECJ1VB1H472K
C5251	ECUX1C104ZFV	16V 0.1U	1	
C5252	VCS1AS106R	10V 10U	1	
C5253	ERJ3GEYJ472V	1/16W 4.7K	1	
C6001	ECEA0GKS221	4V 220U	1	
C6002,03	ECEA0JKS331	6.3V 330U	2	
C6004	ECEA1HKS100	50V 10U	1	ECEA1HKA100B
C6005	ECUV1E104ZFV	25V 0.1U	1	F1H1E104A030
C6011,12	ECUV1E104ZFV	25V 0.1U	2	F1H1E104A030
C6031-34	ECUV1H103ZFV	50V 0.01U	4	
C6061	ECUV1E104ZFV	25V 0.1U	1	F1H1E104A030
C6091	ECUV1E104ZFV	25V 0.1U	1	F1H1E104A030
C6092	ECEA0JKS470	6.3V 47U	1	
C6095	ECUV1H103ZFV	50V 0.01U	1	
C6101	ECEA0JKS470	6.3V 47U	1	
C6201	EEVHB0J330R	6.3V 33U	1	
C6202-06	ECUX1C104ZFV	16V 0.1U	5	
C6211	ECUV1H101JCV	50V 100P	1	ECJ1VC1H101J
C6251	ECUV1C104KBV	16V 0.1U	1	ECJ1VB1C104K
C6253	VCS1AS106R	10V 10U	1	
C6257	EEVHB0J101P	6.3V 100U	1	
C6301	ECUX1C104ZFV	16V 0.1U	1	
C6302	ECUV1C104KBV	16V 0.1U	1	ECJ1VB1C104K
C6303-05	ECUX1C104ZFV	16V 0.1U	3	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C6501,02	EEVHB0J330R	6.3V 33U	2	
C6503-05	ECUX1C104ZFV	16V 0.1U	3	
C6511,12	ECUX1H150JCV	50V 15P	2	ECJ1VC1H150J
D1001	ENC471D5ATUB	DIODE	1	D4EA7471A001 ⚠
D1002	ENC361D5ATRB	DIODE	1	D4EA7361A002 ⚠
D1011	B0EBKT000002	DIODE	1	
D1031	VSD0002	DIODE	1	B0HAGR000005
D1041	AU01Z	DIODE	1	B0HAGM000006
D1051,52	MA165	DIODE	2	MA2C165
D1053	MAZ40360MF	DIODE	1	
D1054	AU01Z	DIODE	1	B0HAGM000006
D1111	21DQ04FC4	DIODE	1	B0JAME000033
D1121,22	11EQS06TA1	DIODE	2	B0JAMG000010
D1125	MA111-TX	DIODE	1	MA2J11100L
D1141	MA4100H	DIODE	1	MAZ41000H
D1151,52	11EQS06TA1	DIODE	2	B0JAMG000010
D1161	AU01Z	DIODE	1	B0HAGM000006
D1162	MAZ743000C	DIODE	1	
D1171	AK04	DIODE	1	B0JAME000037
D1173	MAZ40300HF	DIODE	1	
D2001	MA111-TX	DIODE	1	MA2J11100L
D4301	MA8047M	DIODE	1	MAZ80470M
D5251	MA728-TX	DIODE	1	MA2J72800L
D6091	MA4039HTA	DIODE	1	MAZ40390HF
D6102,03	LNJ301MPUJAD	LED (GREEN)	2	
D6301	MA2SD2400L	DIODE	1	
DL6001	A2BB00000098	DISPLAY TUBE	1	
DZ1001	VSQ1003	SURGE ABSORBER	1	J0LE00000016 ⚠
F1001	XBA1C16NU100	FUSE	1	K5D162AB0003 ⚠
FL4201	F1H0J1050018	FILTER	1	
FL6251	F1H0J1050018	FILTER	1	
FL6253,54	F1H0J1050018	FILTER	2	
FL6255	VLF1491S104T	FILTER	1	F1J1E1040022
FP2001	K1MN50A00005	CONNECTOR(50P)	1	
FP5201	K1MN30B00062	CONNECTOR(30P)	1	
FP5202	K1MN50B00010	CONNECTOR(50P)	1	
IC1101	C0DAEMZ00001	IC	1	
IC1151	C0CBCHG00003	IC	1	
IC2001	MN677203NP1	IC	1	
IC2061	C3ABKG000057	IC	1	
IC2501	BA5833FM-E2	IC	1	
IC3001	MN677533MP	IC	1	
IC3061	CHY57V16DTC8	IC	1	
IC3501	C9ZB00000394	IC	1	
IC4001	TMS320C5410A	IC	1	
IC4021	C0CBCAC00025	IC	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
IC4031	C0JBAR000294	IC	1	
IC4041	AHC1G08HDCK	IC	1	C0JBAA000260
IC4051	AHC1G08HDCK	IC	1	C0JBAA000260
IC4061	AHC2G74HDCTR	IC	1	C0JBAF000367
IC4201	C0FBBK000030	IC	1	
IC4311	C0ABBB000118	IC	1	
IC4381	C0ABBB000118	IC	1	
IC5201	AN8708FHK-V	IC	1	
IC6001	MN101C35DCM	IC	1	
IC6011	C0EBE0000106	IC	1	
IC6101	B3RAD0000037	IC	1	
IC6201	MN102H60GFC	IC	1	
IC6251	C0DBCGE00002	IC	1	
IC6301	PST596JNR	IC	1	C0EBE0000070
IC6302	RFKFRV62B080	IC	1	
IC6303	C3EBFC000025	IC	1	
IC6501	BU2286FV-E2	IC	1	
JK4401	K2YZ09000003	IC	1	
K3001	ERJ3GEY0R00V	1/16W 0	1	
K3011-13	ERJ3GEY0R00V	1/16W 0	3	
K3101	ERJ3GEY0R00V	1/16W 0	1	
K3106	ERJ3GEY0R00V	1/16W 0	1	
K3111,12	ERJ3GEY0R00V	1/16W 0	2	
K3116,17	ERJ3GEY0R00V	1/16W 0	2	
K3201,02	ERJ3GEY0R00V	1/16W 0	2	
K4011,12	ERJ3GEY0R00V	1/16W 0	2	
K4022	ERJ3GEY0R00V	1/16W 0	1	
K4024	ERJ3GEY0R00V	1/16W 0	1	
K4026	ERJ3GEY0R00V	1/16W 0	1	
K6201	ERJ3GEY0R00V	1/16W 0	1	
K6221,22	ERJ3GEY0R00V	1/16W 0	2	
K6251	ERJ6GEY0R00V	1/10W 0	1	
K6301	ERJ3GEY0R00V	1/16W 0	1	
L1001	ELF15N005A	NOISE FILTER	1	⚠
L1111	VLQ0611K100T	COIL 10UH	1	G0A101H00004
L1115	ELELN100KA	INDUCTOR 10UH	1	
L1131	VLQEL05S330K	COIL 33UH	1	G0C330KA0004
L1141	VLQEL05S330K	COIL 33UH	1	G0C330KA0004
L1151	VLQ0611K220T	COIL 22UH	1	G0A220H00005
L2001	VLQ0855K100T	COIL 10UH	1	G1C100K00020
L3091,92	VLQ0855K100T	COIL 10UH	2	G1C100K00020
L3501	G0C220JA0019	COIL 22UH	1	
L3505	ELJFCR68KF	COIL 0.68UH	1	
L4211	VLQ0855K220T	COIL 22UH	1	G1C220KA0038
L4301	ELESN101JA	COIL 100UH	1	
L5201,02	ELJEA100KF	COIL	2	
L5251	ELJEA100KF	COIL	1	
L6001	VLQEL05T101J	COIL 100UH	1	G0C101JA0003
L6101	VLQEL05T221J	COIL 220UH	1	G0C221JA0003
L6501,02	VLQ0855K220T	COIL 22UH	2	G1C220KA0038

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
LB2001	J0JHC0000045	COIL	1	
LB2011-41	VLP0146-T	COIL	31	J0JBC0000015
LB2042,43	J0JHC0000045	COIL	2	
LB3001,02	J0JHC0000045	COIL	2	
LB3011	VLP0157-T	COIL	1	J0JCC0000077
LB3201	VLP0155-T	COIL	1	J0JCC0000119
LB3202-04	ERJ3GEYJ101V	1/16W 100	3	
LB3206-08	VLP0155-T	COIL	3	J0JCC0000119
LB3533,34	VLP0146-T	COIL	2	J0JBC0000015
LB3536-39	VLP0146-T	COIL	4	J0JBC0000015
LB4200-06	VLP0146-T	COIL	7	J0JBC0000015
LB4214-17	VLP0146-T	COIL	4	J0JBC0000015
LB5201	JALBK2HS470T	COIL	1	G1CYYYZ00003
LB5202	VLP0323A601R	CHIP SOLID INDUCTOR	1	J0JCC0000062
LB5203,04	VLP0155-T	COIL	2	J0JCC0000119
LB5205,06	VLP0323A601R	CHIP SOLID INDUCTOR	2	J0JCC0000062
LB6001-04	ERJ3GEY0R00V	1/16W 0	4	
LB6012-14	ERJ3GEY0R00V	1/16W 0	3	
LB6016-19	ERJ3GEY0R00V	1/16W 0	4	
LB6201	VLP0146-T	COIL	1	J0JBC0000015
LB6202	VLP0155-T	COIL	1	J0JCC0000119
LB6501,02	VLP0146-T	COIL	2	J0JBC0000015
LB6512-14	VLP0155-T	COIL	3	J0JCC0000119
LB6515	VLP0157-T	COIL	1	J0JCC0000077
LR1041	J1ZZA0000001	COIL	1	
P1001	K2AB2B000002	AC INLET	1	⚠
P6005	VJP3233A002	CONNECTOR(MALE) 2P	1	K1KA02A00010
PC1	RPGC0017	PACKING CASE	1	(P-K)
PC1	RPG0019	PACKING CASE	1	(P-S)
PC1	RPG0021	PACKING CASE	1	(PC-K)
PC1	RPG0022	PACKING CASE	1	(PC-S)
PC2	RPN1480	CUSHION(L/R)	1	
PC3	VPF0293-L	POLYETHLENE BAG	1	
PP3201	VJP4370E022B	CONNECTOR(MALE) 22P	1	K1KA22A00044
PP4301	VJP4369E014B	CONNECTOR(MALE) 14P	1	K1KA14A00134
PP6001	K1KA06B00126	CONNECTOR(MALE) 6P	1	
PP6002	K1KA10B00155	CONNECTOR(MALE) 10P	1	
PR1171	VSF0015A10	FUSE	1	B1ZAZ0000014 ⚠
PS3201	VJS4222C022B	CONNECTOR(FEMALE) 22P	1	K1KB22A00025
PS4201	VJS4222C014B	CONNECTOR(FEMALE) 14P	1	K1KB14A00037
PS6001	K1KB06B00033	CONNECTOR(FEMALE) 6P	1	
PS6002	K1KB10B00045	CONNECTOR(FEMALE) 10P	1	
PS6201	VJS4047C010	CONNECTOR(10P)	1	K1MN10A00030
Q1021	2SC4662LF654	TRANSISTOR	1	B1BADP000005
Q1051	PS2501L-1E3H	PHOTO COUPLER	1	B3PBA0000076
Q1052	2SD1996-STA	TRANSISTOR	1	2SD19960SA
Q1115	B1DHCC000029	TRANSISTOR	1	

Q1115	[illegible]	TRANSISTOR	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
Q1125	2SB1417PQTA	TRANSISTOR	1	2SB14170JA
Q1126	XN1501TX	TRANSISTOR	1	XN0150100L
Q1141	2SB1320A-RTA	TRANSISTOR	1	2SB1320ARA
Q4392	2SD601A-RSTX	TRANSISTOR	1	2SD0601AHL
Q4411	2SD1328-R	TRANSISTOR	1	2SD13280R
Q4421	2SD1328-R	TRANSISTOR	1	2SD13280R
Q4481-83	2SD601A-RSTX	TRANSISTOR	3	2SD0601AHL
Q5211	2SB1115-T	TRANSISTOR	1	B1BDBF000004
Q5215	2SB1115-T	TRANSISTOR	1	B1BDBF000004
Q6091	2SC3311ASA	TRANSISTOR	1	
Q6095	2SD1996RSTA	TRANSISTOR	1	2SD19960HA
QR1115	UN2213	TRANSISTOR	1	UNR2213
QR3521	UN2212	TRANSISTOR	1	UNR2212
QR4391	UNR221100L	TRANSISTOR	1	
QR4393	UNR221100L	TRANSISTOR	1	
QR4394	UN2111	TRANSISTOR	1	UNR211100L
QR5251	UN2121-TX	TRANSISTOR	1	UNR212100L
QR6053,54	DTA123JK-T96	TRANSISTOR	2	B1GDCFEM0002
QR6301	UN5212-TX	TRANSISTOR	1	UNR521200L
R1031,32	ERDS2FJ124T	1/4W 120K	2	
R1041,42	ERDS2FJ474	1/4W 470K	2	
R1043	ERG2SJ680P	2W 68	1	
R1051	ERDS2FJ750	1/4W 75	1	
R1052	ERDS2FJ2R2	1/4W 2.2	1	ERDS2TJ2R2T
R1053	ERDS2FJ331	1/4W 330	1	
R1054	EROS2TKG6800	1/4W 68	1	
R1101	ERJ3GEYJ750	1/16W 75	1	ERJ3GEYJ750V
R1102,03	ERJ3GEYF122V	1/16W 1.2K	2	
R1104	MCR03PZHJ561	1/16W 560	1	ERJ3GEYJ561V
R1105	ERJ6GEYJ271V	1/10W 270	1	D0GD271JA003
R1106	ERJ3GEYJ392V	1/16W 3.9K	1	
R1107	ERJ3GEYJ472V	1/16W 4.7K	1	
R1115	ERJ3GEYJ104V	1/16W 100K	1	D0GB104JA002
R1116	ERJ3GEYJ102V	1/16W 1K	1	
R1125	ERJ3GEYJ271V	1/16W 270	1	
R1126	ERJ3GEYF182	1/16W 1.8K	1	
R1127	ERJ3GEYF122V	1/16W 1.2K	1	
R1128	ERJ3GEYJ151V	1/16W 150	1	
R1131	ERDS2FJ100	1/4W 10	1	
R1141	ERJ3GEYJ183V	1/16W 18K	1	D0GB183JA002
R1161	ERDS2FJ100	1/4W 10	1	
R1171	ERJ3GEYJ104V	1/16W 100K	1	D0GB104JA002
R2011	ERJ3GEYJ332V	1/16W 3.3K	1	D0GB332JA002
R2012	ERJ3GEYJ563V	1/16W 56K	1	
R2013	ERJ3GEY0R00V	1/16W 0	1	
R2014	ERJ3GEYJ332V	1/16W 3.3K	1	D0GB332JA002
R2015	ERJ3GEYJ223V	1/16W 22K	1	D0GB223JA002
R2016	ERJ3GEY0R00V	1/16W 0	1	
R2017	ERJ3GEYJ332V	1/16W 3.3K	1	D0GB332JA002
R2018	ERJ3GEYJ223V	1/16W 22K	1	D0GB223JA002
R2019	ERJ3GEYJ332V	1/16W 3.3K	1	D0GB332JA002
R2020	ERJ3GEYJ223V	1/16W 22K	1	D0GB223JA002

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R2021	ERJ3GEYJ332V	1/16W 3.3K	1	D0GB332JA002
R2022	ERJ3GEYJ123V	1/16W 12K	1	
R2023	ERJ3GEYJ332V	1/16W 3.3K	1	D0GB332JA002
R2024	ERJ3GEYJ123V	1/16W 12K	1	
R2026	ERJ3GEYJ473V	1/16W 47K	1	D0GB473JA002
R2028,29	ERJ3GEYJ472V	1/16W 4.7K	2	
R2030	ERJ3GEYJ103V	1/16W 10K	1	D0GB103JA002
R2031-33	ERJ3GEYJ682V	1/16W 6.8K	3	D0GB682JA002
R2034	ERJ3GEYJ183V	1/16W 18K	1	D0GB183JA002
R2035	ERJ3GEYJ822V	1/16W 8.2K	1	D0GB822JA002
R2036	ERJ3GEYJ682V	1/16W 6.8K	1	D0GB682JA002
R2037	ERJ3GEYJ333V	1/16W 33K	1	D0GB333JA002
R2038	ERJ3GEYJ102V	1/16W 1K	1	
R2040	ERJ3GEY0R00V	1/16W 0	1	
R2041	ERJ3GEYJ470V	1/16W 47	1	
R2043,44	ERJ3GEYJ104V	1/16W 100K	2	D0GB104JA002
R2047,48	ERJ3GEYJ104V	1/16W 100K	2	D0GB104JA002
R2051	ERJ3GEYJ104V	1/16W 100K	1	D0GB104JA002
R2061	ERJ3GEYJ330V	1/16W 33	1	D0GB330JA002
R2502,03	ERJ3GEYJ153V	1/16W 15K	2	
R2504,05	ERJ3GEYJ823V	1/16W 82K	2	D0GB823JA002
R2507	ERJ6GEYJ6R8V	1/10W 6.8	1	
R3001	ERJ3GEYJ220V	1/16W 22	1	
R3002	ERJ3GEYJ472V	1/16W 4.7K	1	
R3003	ERJ3GEYJ101V	1/16W 100	1	
R3004	ERJ3GEYJ221V	1/16W 220	1	
R3005	ERJ3GEYJ473V	1/16W 47K	1	D0GB473JA002
R3007	ERJ3GEY0R00V	1/16W 0	1	
R3071	ERJ3GEYJ103V	1/16W 10K	1	D0GB103JA002
R3080	ERJ3RBD752V	1/16W 7.5K	1	
R3082	ERJ3RBD162V	1/16W 1.6K	1	
R3083	ERJ3RBD112V	1/16W 1.1K	1	
R3084	ERJ3RBD752V	1/16W 7.5K	1	
R3085	ERJ3RBD183V	1/16W 18K	1	
R3086	ERJ3RBD432V	1/16W 4.3K	1	
R3087-89	ERJ3RBD752V	1/16W 7.5K	3	
R3090	ERJ3RBD272V	1/16W 2.7K	1	
R3101	ERJ3RED750V	1/16W 75	1	
R3106	ERJ3RED750V	1/16W 75	1	
R3111	ERJ3RED750V	1/16W 75	1	
R3115	ERJ3RED750V	1/16W 75	1	
R3521	ERJ3GEYJ222V	1/16W 2.2K	1	
R3522	ERJ3GEYJ103V	1/16W 10K	1	D0GB103JA002
R3533,34	ERJ3GEYF750V	1/16W 75	2	
R3536-39	ERJ3GEYF750V	1/16W 75	4	
R4001,02	ERJ3GEYJ104V	1/16W 100K	2	D0GB104JA002
R4004	ERJ3GEYJ104V	1/16W 100K	1	D0GB104JA002
R4005,06	ERJ3GEY0R00V	1/16W 0	2	
R4009,10	ERJ3GEYJ103V	1/16W 10K	2	D0GB103JA002
R4201	ERJ3GEY0R00V	1/16W 0	1	
R4301	ERJ3GEYJ222V	1/16W 2.2K	1	
R4302-04	ERJ3GEYJ223V	1/16W 22K	3	D0GB223JA002
R4311	ERJ3GEYJ104V	1/16W 100K	1	D0GB104JA002
R4312	JAR0816P562D	1/16W 5.6K	1	D0HB562ZA002

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R4313	JAR0816P123D	1/16W 12K	1	D0HB123ZA002
R4321	ERJ3GEYJ104V	1/16W 100K	1	D0GB104JA002
R4322	JAR0816P562D	1/16W 5.6K	1	D0HB562ZA002
R4323	JAR0816P123D	1/16W 12K	1	D0HB123ZA002
R4381,82	ERJ3GEYJ683V	1/16W 86K	2	D0GB683JA002
R4383	ERJ3GEYJ473V	1/16W 47K	1	D0GB473JA002
R4385	ERJ3GEYJ333V	1/16W 33K	1	D0GB333JA002
R4386	ERJ3GEYJ473V	1/16W 47K	1	D0GB473JA002
R4391	ERJ3GEYJ222V	1/16W 2.2K	1	
R4392	ERJ3GEYJ103V	1/16W 10K	1	D0GB103JA002
R4393	ERJ3GEYJ332V	1/16W 3.3K	1	D0GB332JA002
R4411	ERJ3GEYJ473V	1/16W 47K	1	D0GB473JA002
R4412,13	ERJ3GEYJ821V	1/16W 820	2	
R4414	ERJ3GEYJ221V	1/16W 220	1	
R4421	ERJ3GEYJ473V	1/16W 47K	1	D0GB473JA002
R4422,23	ERJ3GEYJ821V	1/16W 820	2	
R4424	ERJ3GEYJ221V	1/16W 220	1	
R4481	ERJ3GEYJ473V	1/16W 47K	1	D0GB473JA002
R4482-84	ERJ3GEYJ821V	1/16W 820	3	
R4485	ERJ3GEYJ332V	1/16W 3.3K	1	D0GB332JA002
R4486	ERJ3GEYJ821V	1/16W 820	1	
R4487	ERJ3GEYJ332V	1/16W 3.3K	1	D0GB332JA002
R4488	ERJ3GEYJ821V	1/16W 820	1	
R4489	ERJ3GEYJ221V	1/16W 220	1	
R5203	ERJ3GEYJ563V	1/16W 56K	1	
R5204	ERJ3GEYJ223V	1/16W 22K	1	D0GB223JA002
R5211	ERJ3GEYJ2R2V	1/16W 2.2	1	D0GB2R2JA002
R5212	ERJ12YJ270H	1/2W 27	1	
R5213	ERJ3GEYJ473V	1/16W 47K	1	D0GB473JA002
R5214	ERJ3GEYJ223V	1/16W 22K	1	D0GB223JA002
R5215	ERJ3GEYJ2R2V	1/16W 2.2	1	D0GB2R2JA002
R5216	ERJ12YJ270H	1/2W 27	1	
R5217	ERJ3GEYJ473V	1/16W 47K	1	D0GB473JA002
R5221,22	ERJ3GEYJ822V	1/16W 8.2K	2	D0GB822JA002
R5232	ERJ3RBD123V	1/16W 12K	1	
R5235	ERJ3GEYJ105V	1/16W 1M	1	
R5236	ERJ3GEY0R00V	1/16W 0	1	
R5252	ERJ3GEYJ102V	1/16W 1K	1	
R6021	ERJ3GEYJ103V	1/16W 10K	1	D0GB103JA002
R6022	ERJ3GEY0R00V	1/16W 0	1	
R6023	ERJ3GEYJ103V	1/16W 10K	1	D0GB103JA002
R6024	ERJ3GEYJ122V	1/16W 1.2K	1	
R6025	ERJ3GEYJ103V	1/16W 10K	1	D0GB103JA002
R6026	ERJ3GEYJ272V	1/16W 2.7K	1	
R6031-34	ERJ3GEYJ103V	1/16W 10K	4	D0GB103JA002
R6035-38	ERJ3GEYJ473V	1/16W 47K	4	D0GB473JA002
R6053,54	ERJ3GEYJ101V	1/16W 100	2	
R6054	ERJ3GEYJ471V	1/16W 470	1	
R6061,62	ERJ3GEYJ102V	1/16W 1K	2	
R6063	ERJ3GEYJ303V	1/16W 30K	1	
R6064-66	ERJ3GEYJ473V	1/16W 47K	3	D0GB473JA002
R6067	ERJ3GEYJ103V	1/16W 10K	1	D0GB103JA002
R6078-89	ERJ3GEYJ473V	1/16W 47K	12	D0GB473JA002
R6091	ERJ6GEYJ221V	1/10W 220	1	

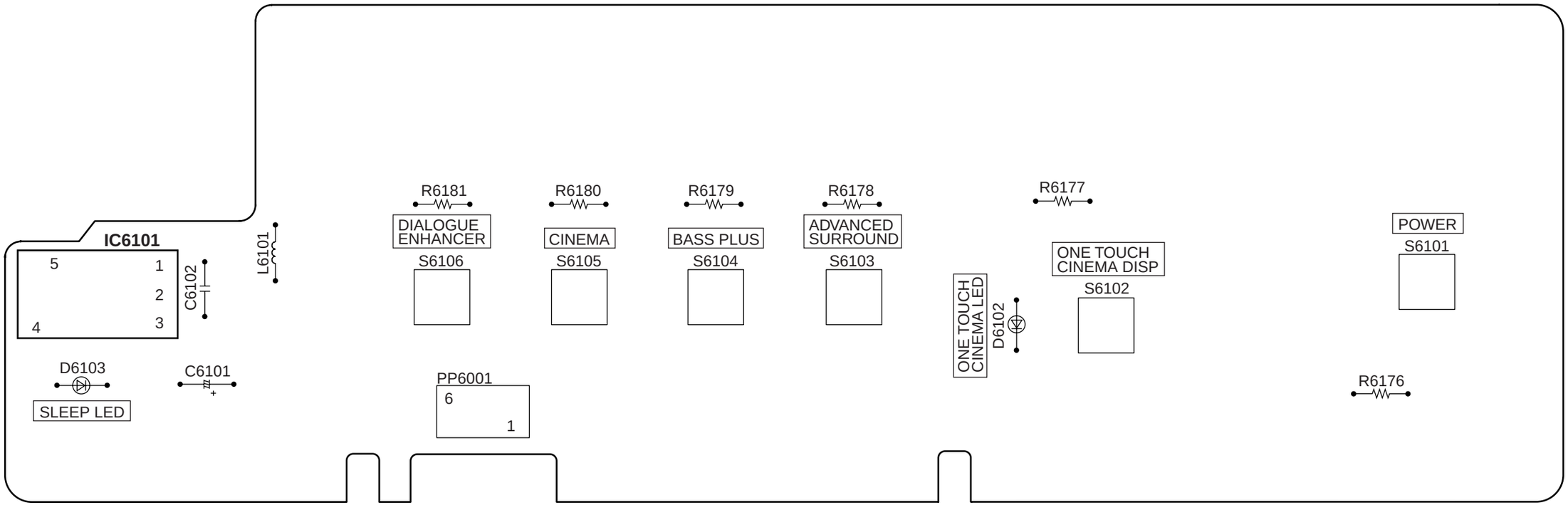
Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R6095	ERJ3GEYJ103V	1/16W 10K	1	D0GB103JA002
R6161	ERDS2FJ122	1/4W 1.2K	1	ERDS2TJ122T
R6162	ERDS2FJ152	1/4W 1.5K	1	
R6171	ERDS2FJ122	1/4W 1.2K	1	ERDS2TJ122T
R6172	ERDS2FJ152	1/4W 1.5K	1	
R6173	ERDS2FJ222	1/4W 2.2K	1	ERDS2TJ222T
R6174	ERDS2FJ332	1/4W 3.3K	1	
R6175	ERDS2FJ472	1/4W 4.7K	1	ERDS2TJ472T
R6176	ERDS2FJ122	1/4W 1.2K	1	ERDS2TJ122T
R6177	ERDS2FJ152	1/4W 1.5K	1	
R6178	ERDS2FJ222	1/4W 2.2K	1	ERDS2TJ222T
R6179	ERDS2FJ332	1/4W 3.3K	1	
R6180	ERDS2FJ472	1/4W 4.7K	1	ERDS2TJ472T
R6181	ERDS2TJ682T	1/4W 6.8K	1	
R6201	ERJ3GEYJ103V	1/16W 10K	1	D0GB103JA002
R6205	ERJ3GEYJ102V	1/16W 1K	1	
R6206	ERJ3GEYJ103V	1/16W 10K	1	D0GB103JA002
R6240	ERDS2FJ102	1/4W 1K	1	
R6301	ERJ3GEYJ472V	1/16W 4.7K	1	
R6303	ERJ3GEYJ472V	1/16W 4.7K	1	
R6512	ERJ3RBD331V	1/16W 330	1	
R6513	ERJ3GEYJ103V	1/16W 10K	1	D0GB103JA002
R6514	ERJ3GEYJ470V	1/16W 0	1	
R6515	ERJ3GEYJ100V	1/16W 10	1	
RA2061	EXBV4V330JV	RESISTOR-RESISTOR	1	
RA2501	EXBV8V473JV	RESISTOR-RESISTOR	1	
RA3008	EXBV4V103JV	RESISTOR-RESISTOR	1	
RA3009	EXBV4V221JV	RESISTOR-RESISTOR	1	
RA3011	EXBV4V473JV	RESISTOR-RESISTOR	1	
RA4001	EXBV4V473JV	RESISTOR-RESISTOR	1	
RA4002	EXBV8V104JV	RESISTOR-RESISTOR	1	
RA4003	EXBV4VR000V	RESISTOR-RESISTOR	1	
RA4004	EXBV8VR000V	RESISTOR-RESISTOR	1	
RA4005,06	EXBV4VR000V	RESISTOR-RESISTOR	2	
RA5231	EXBV8V101JV	RESISTOR-RESISTOR	1	
RA6201-04	EXBV4V103JV	RESISTOR-RESISTOR	4	
RA6205	EXBV8V473JV	RESISTOR-RESISTOR	1	
RA6206	EXBV4V103JV	RESISTOR-RESISTOR	1	
RA6207	EXBV4V472JV	RESISTOR-RESISTOR	1	
S6101	EVQ11G07K	SWITCH(POWER)	1	
S6102	EVQ11G07K	SWITCH(ONE TOUCH)	1	
S6103	EVQ11G07K	SWITCH(AVSS)	1	
S6104	EVQ11G07K	SWITCH(BASS)	1	
S6105	EVQ11G07K	SWITCH(CINEMA)	1	
S6106	EVQ11G07K	SWITCH(D-ENH)	1	
S6161	EVQ11G07K	SWITCH(PAUSE)	1	
S6162	EVQ11G07K	SWITCH(PLAY)	1	
S6163	EVQ11G07K	SWITCH(STOP)	1	
S6171	EVQ11G07K	SWITCH(F-SKIP)	1	
S6172	EVQ11G07K	SWITCH(R-SKIP)	1	
S6173	EVQ11G07K	SWITCH(QUICK)	1	
S6174	EVQ11G07K	SWITCH(A-B)	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
S6175	EVQ11G07K	SWITCH(REPEAT)	1	
S6176	EVQ11G07K	SWITCH(RANDOM)	1	
S6181	EVQ11G07K	SWITCH(OPEN/CLOSE)	1	
S6191	ESE24SH7	SWITCH(COUNT)	1	
S6192	ESE24SH7	SWITCH(DIRECTION)	1	
SW2501	RSH1A048-A	DOUBLE SWITCH	1	
T1021	ETS28AV145AC	TRANSFORMER	1	⚠
X6001	RSXY8M00M06T	CERAMIC OSCILLATOR	1	H2D800400009
X6501	VSX1044	CRYSTAL OSCILLATOR	1	H0J368500003

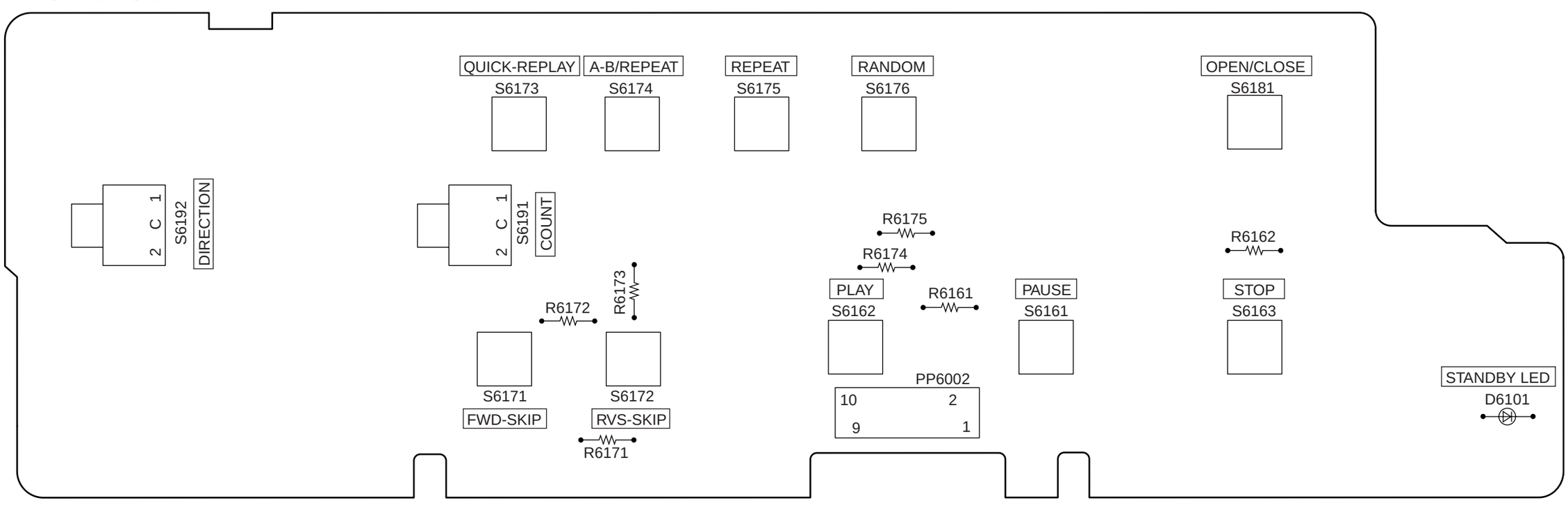
19. Schematic Diagram for printing with A4 size

H020100000HP

FRONT 2 P.C.B.

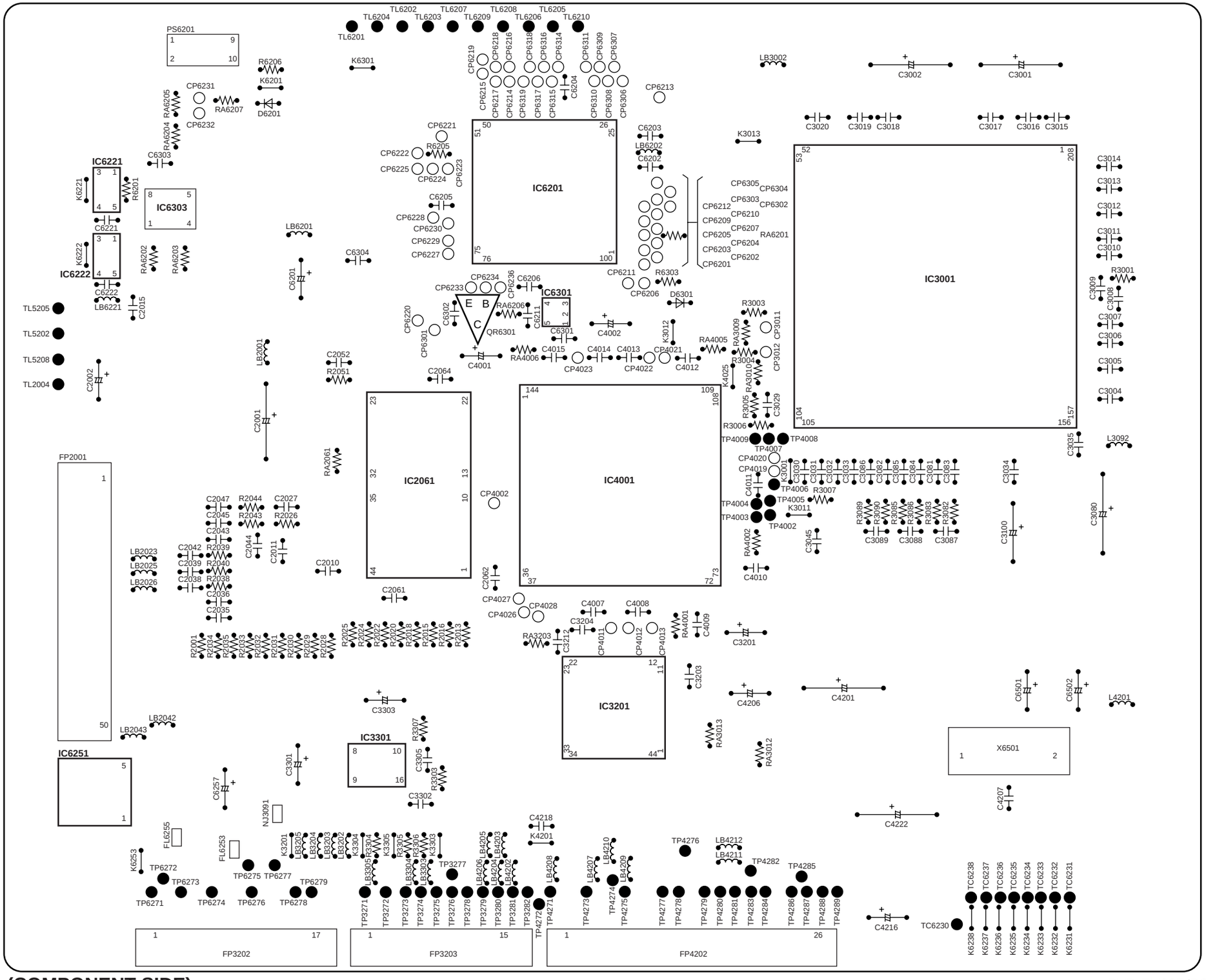


FRONT 1 P.C.B.



DVD-RV32P/PC
FRONT2 P.C.B. and FRONT1 P.C.B.
CEP0005B and CEP0005A

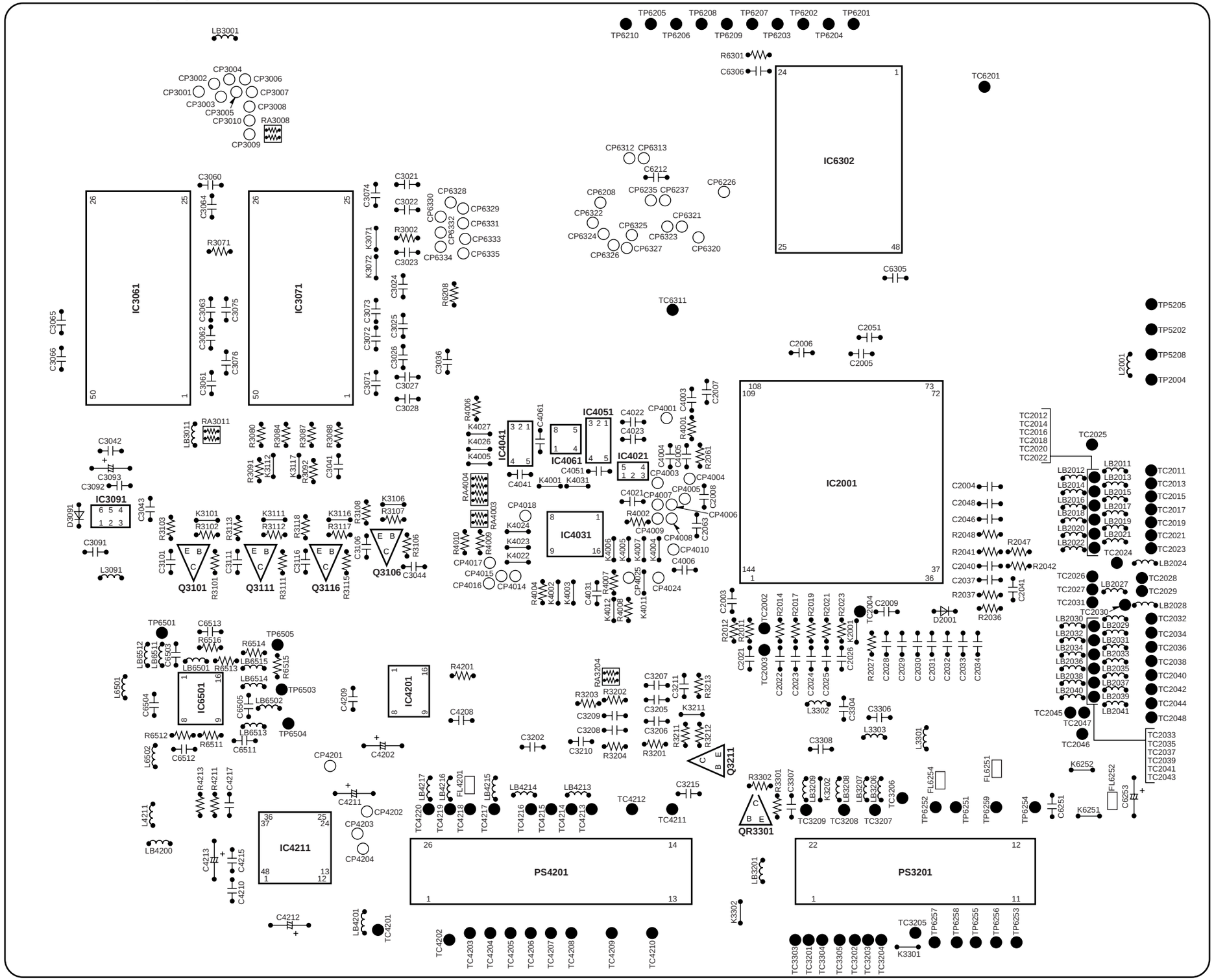
MODULE P.C.B. (1/2)



(COMPONENT SIDE)

DVD-RV32P/PC
MODULE P.C.B.
REP3303C-1

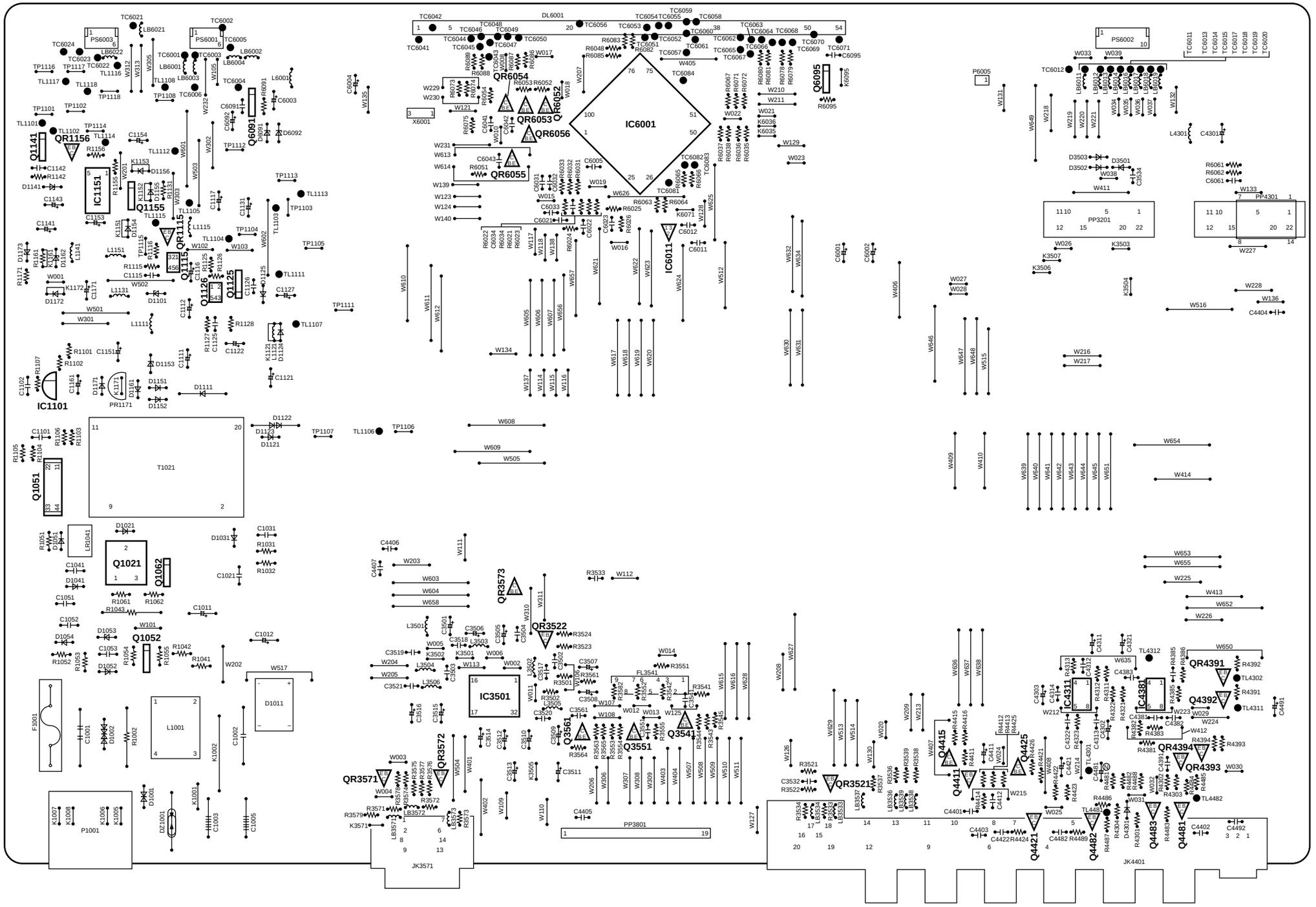
MODULE P.C.B. (2/2)



(FOIL SIDE)

DVD-RV32P/PC
MODULE P.C.B.
REP3303C-1

MOTHER P.C.B.


IC1101
IC6001
IC3501
Q1051
Q1021
Q1052
Q1062
Q1141
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Q1115
Q1125
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Q3541
Q3561
Q4421
Q4482
Q4483
Q4481
Q4411
Q4415
Q4425
Q4391
Q4392
Q4393
Q4394
QR1156
QR6054
QR6052
QR6053
QR6056
QR6055
QR3573
QR3522
QR3572
QR3571
QR3521
T1021
P1001
JK3571
JK4401
PP3801
PP3201
PS6003
PS6001
PS6002
X6001
F1001
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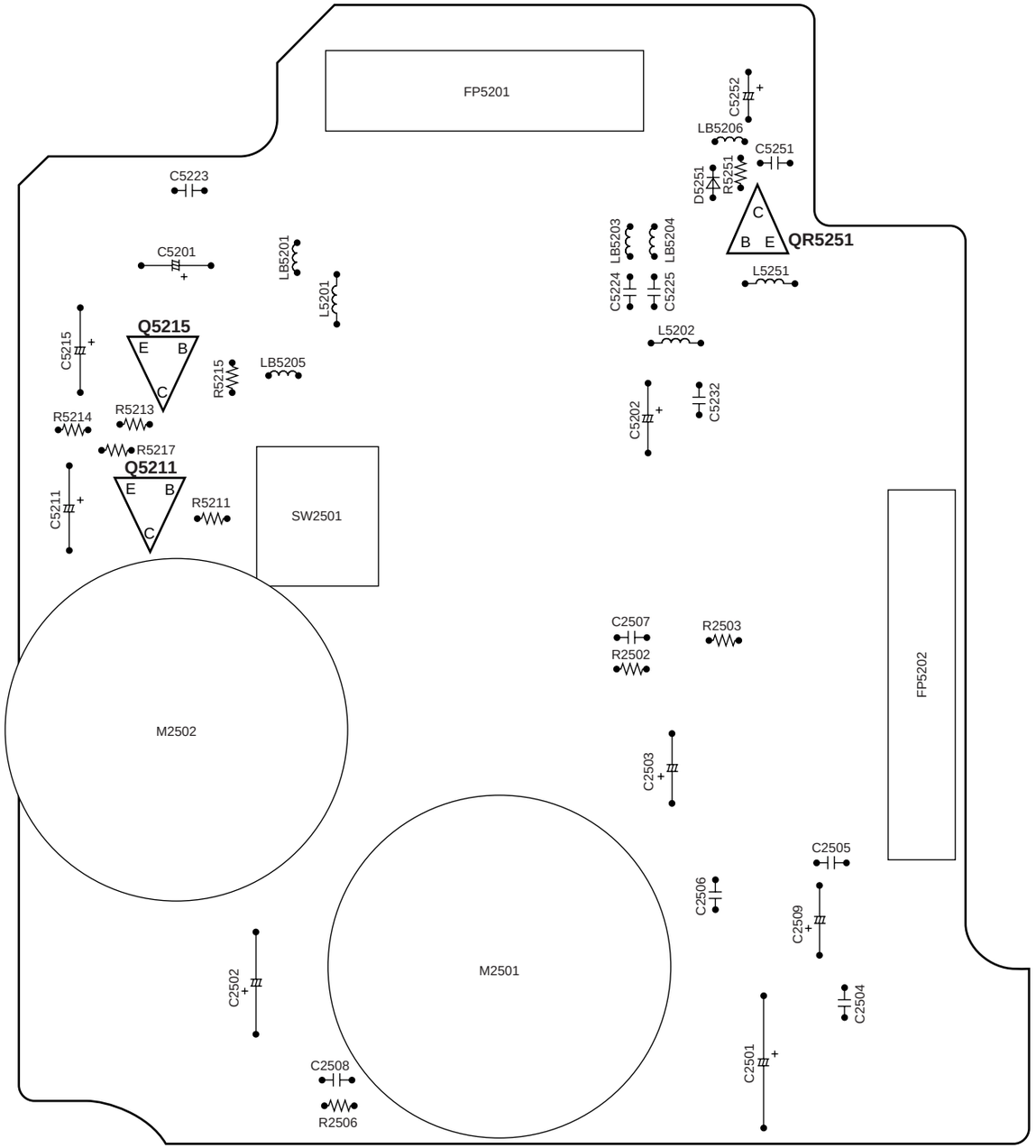
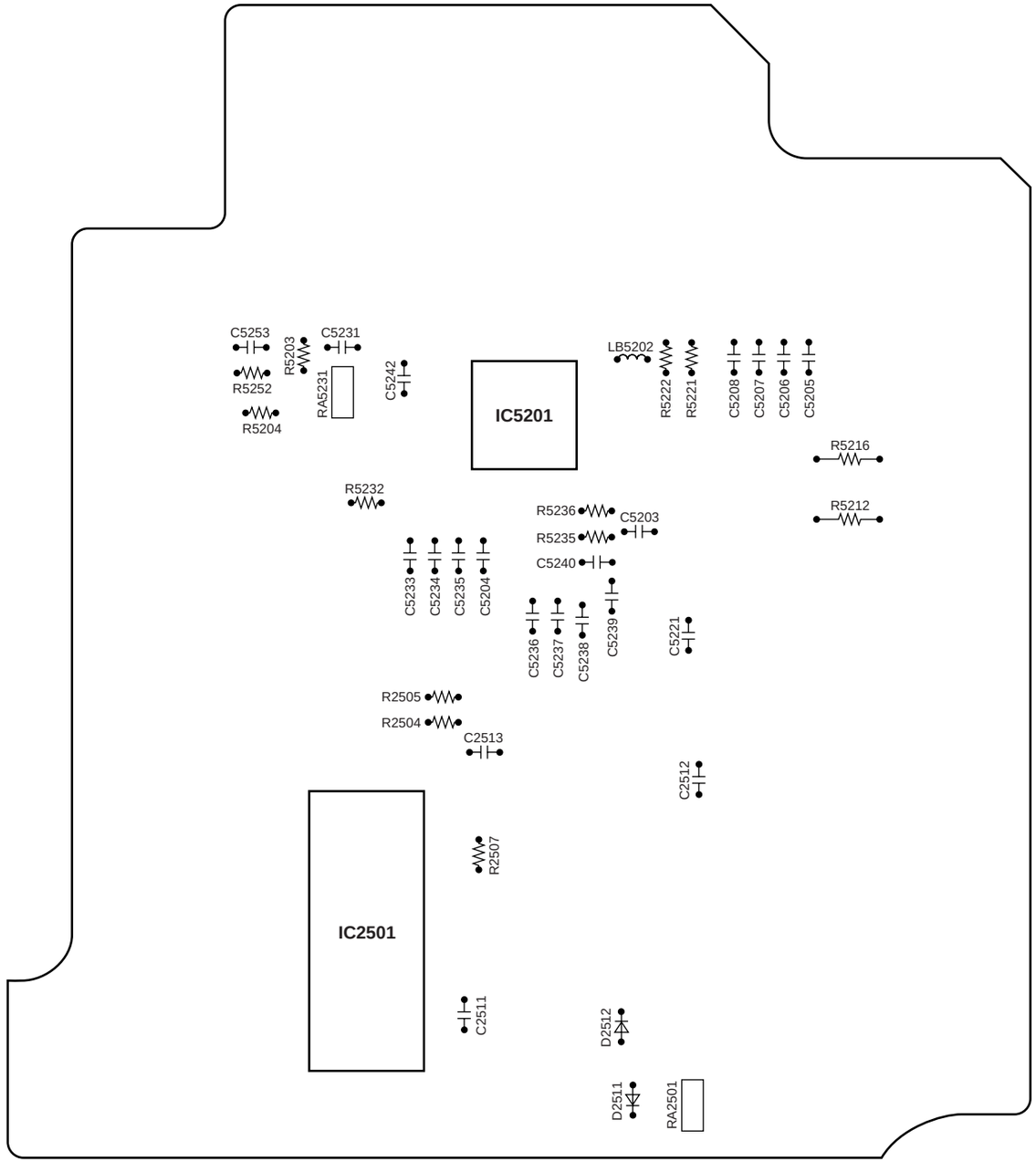
DZ1001
D1011
DVD-RV32P/PC
MOTHER P.C.B.
REP3304C-1

TERMINAL P.C.B.



(COMPONENT SIDE)

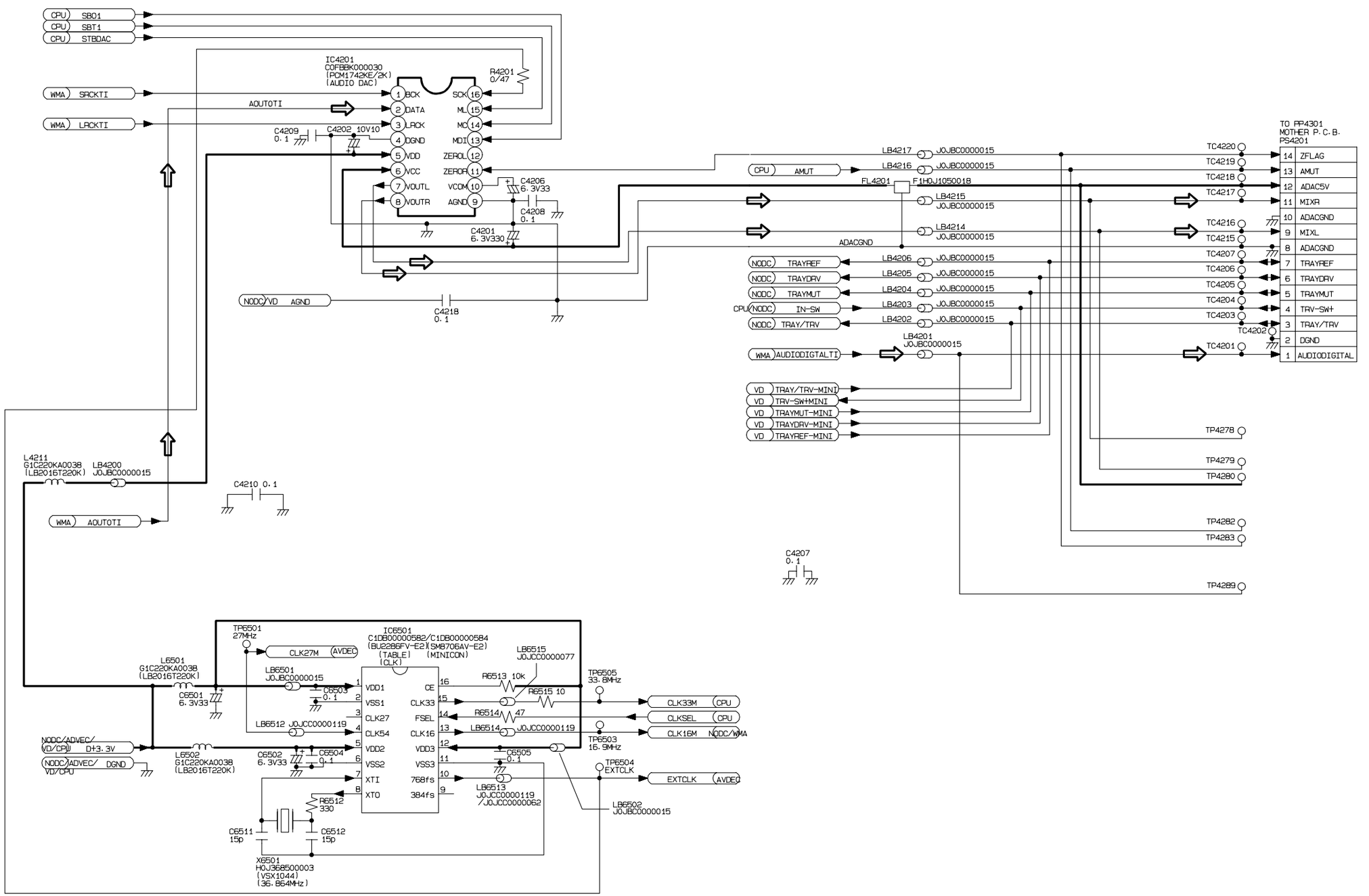


(FOIL SIDE)

DVD-RV32P/PC
TERMINAL P.C.B.
REP3091B-N

PO SECTION:Page A VO SECTION:Page B AO SECTION:Page C
OP SECTION:Page D NODC SECTION:Page E AVDEC SECTION:Page F
VD SECTION:Page G AD SECTION:Page H WMA SECTION:Page I
CPU SECTION:Page J

AUDIO SIGNAL PATH



NOTE:DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST. AND MAY BE SLIGHTLY DIFFERNT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

DVD-RV32P/PC
AUDIO-DAC SECTION
(MODULE P.C.B.(4/6))
SCHEMATIC DIAGRAM

IC3001
(AV DECODER)

IC4201
(AUDIO D/A CONVERTER)

MAIN SIGNAL

BCK 1
LRCK 3
DATA 2

AUDIO SERIAL PORT

FROM IC6201-57PIN → STBDAC 15
FROM IC6201-70PIN → SBT1 14
FROM IC6201-72PIN → SBO1 13

SERIAL CONTROL PORT

OVERSAMPLING DIGITAL FILTER WITH FUNCTION CONTROLLER

ENHANCED MULTI-LEVEL DELTA-SIGMA MODULATOR

SYSTEM CLOCK

FROM IC6501-10PIN → SCLK 16

SYSTEM CLOCK MANAGER

ZERO DETECT

DAC → OUTPUT AMP AND LOW-PASS FILTER → MIXL 7

DAC → OUTPUT AMP AND LOW-PASS FILTER → MIXR 8

IC4311
AMP
2 → 1

IC4311
AMP
6 → 7

IC4381
AMP
7 → 6

IC4381
AMP
2 → 1

JK4401

MIX L

MIX R

SW OUT

A MUT ← FROM IC6201-64PIN

A MUT ← FROM IC6201-64PIN

IC4031
(AUDIO AMP)

12 4Y
14 4A
11 3A → 3Y 9
7 2Y → 1Y 4
5 2A → 1A 2

SRCK 90
LRCK 89
AOUT0 92

IEC OUT 85

D+5V
GND
VCC
VIN

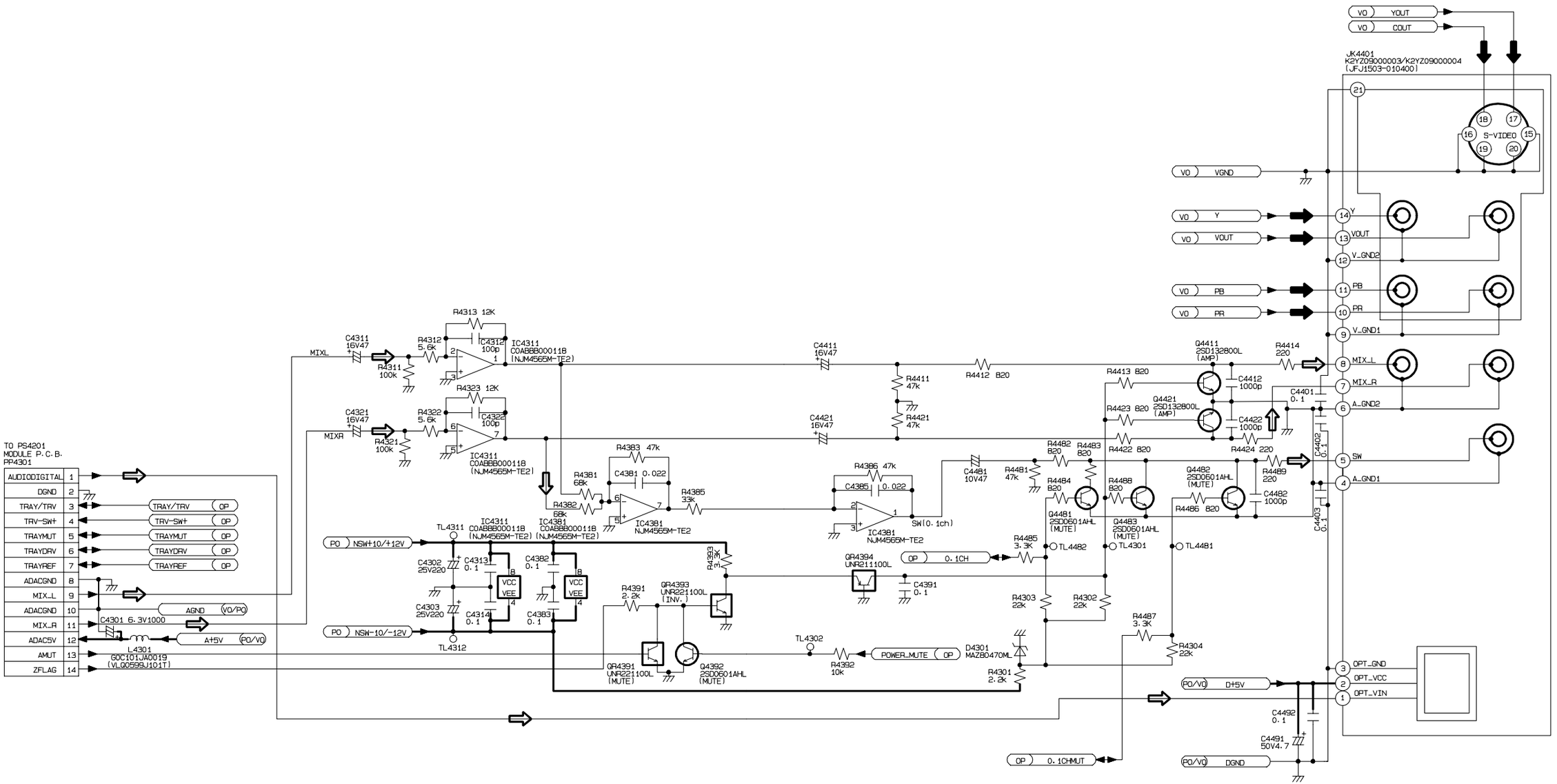
DIGITAL AUDIO OUT OPTICAL

IC3001-92
6.4Vp-p(10usec./div.)

DVD-RV32P/PC
AUDIO BLOCK DIAGRAM

PO SECTION:Page A VO SECTION:Page B AO SECTION:Page C
OP SECTION:Page D NODC SECTION:Page E AVDEC SECTION:Page F
VD SECTION:Page G AD SECTION:Page H WMA SECTION:Page I
CPU SECTION:Page J

VIDEO SIGNAL PATH
AUDIO SIGNAL PATH



NOTE:DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST. AND MAY BE SLIGHTLY DIFFERENT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

DVD-RV32P/PC
AUDIO-OUT SECTION
(MOTHER P.C.B.(3/4))
SCHEMATIC DIAGRAM

VIDEO SIGNAL PATH

AUDIO SIGNAL PATH

PO SECTION:Page A VO SECTION:Page B AO SECTION:Page C
OP SECTION:Page D NODC SECTION:Page E AVDEC SECTION:Page F
VD SECTION:Page G AD SECTION:Page H WMA SECTION:Page I
CPU SECTION:Page J

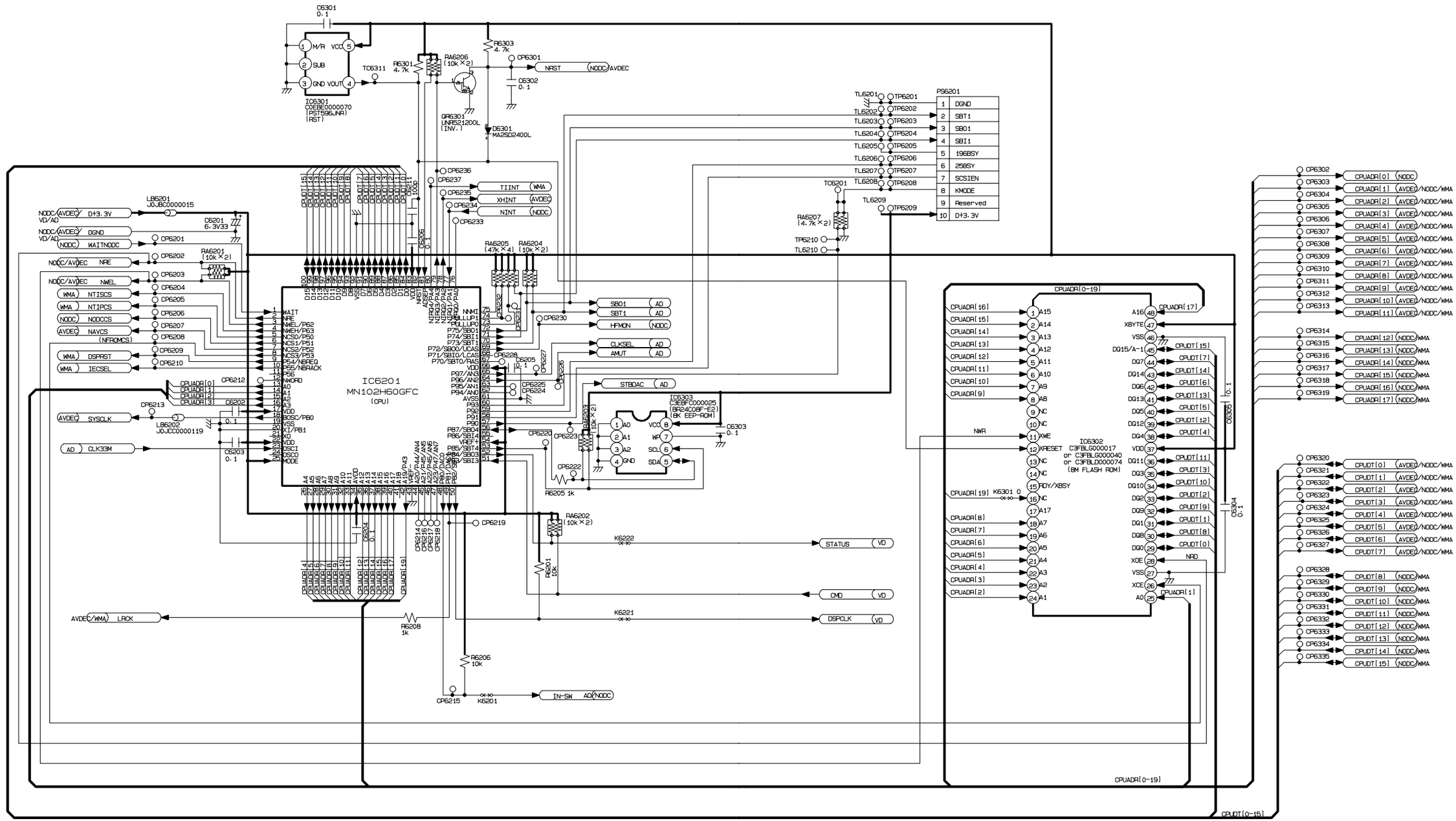
IC3061
C3ABMG000103
(MSM56V16160F-8TK-FM)
(16M SDRAM)
or C3ABMG000092 or C3ABMG000084 or C3ABMG000096 or C3ABMG000093 or C3ABMG000108
(K4S161622D-TC60)(K4S161622D-TC80)(LC3B16161ET-70-MPB)(HY57V161610DTC-7)(NT56V1616 A0T-7)

IC3001
MN677533MP
(AVDEC)

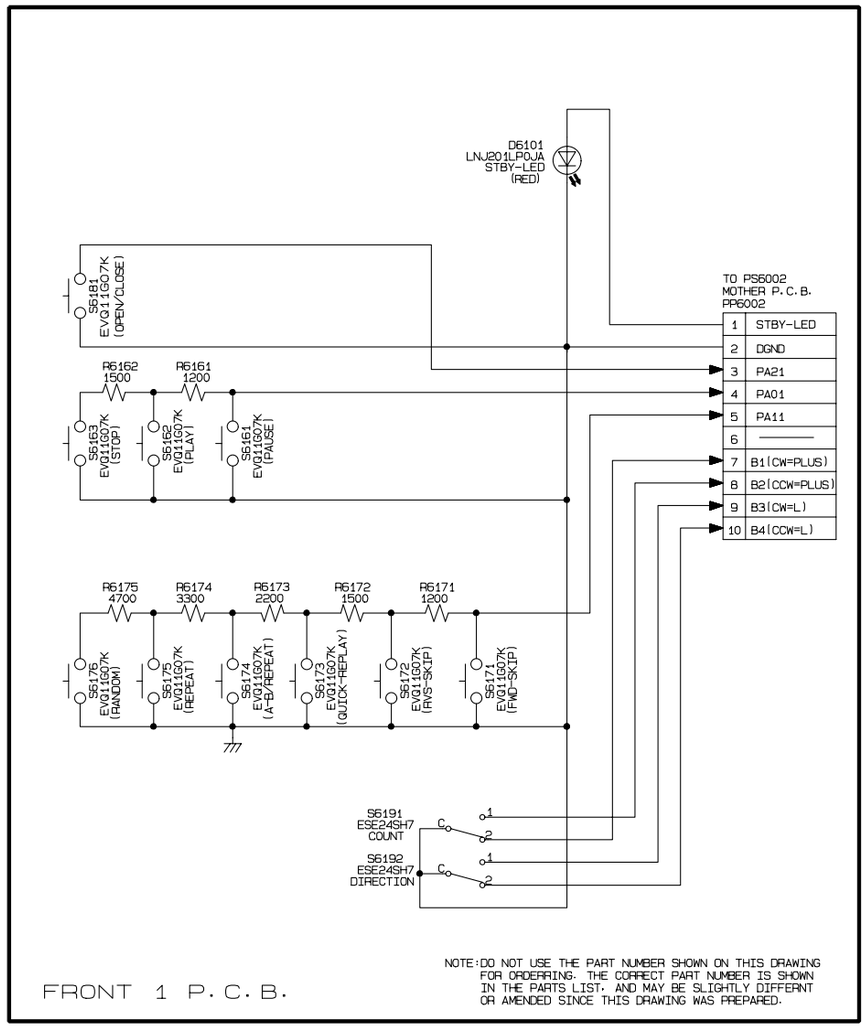
NOTE:DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST, AND MAY BE SLIGHTLY DIFFERNT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

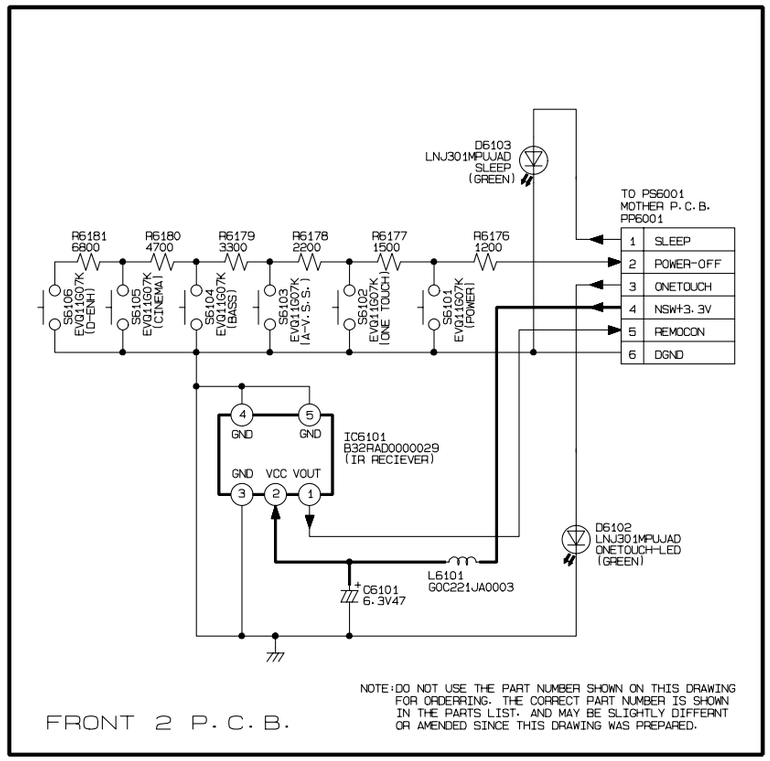
DVD-RV32P/PC
AVDEC SECTION
(MODULE P.C.B.(2/6))
SCHEMATIC DIAGRAM

PO SECTION:Page A VO SECTION:Page B AO SECTION:Page C
OP SECTION:Page D NODC SECTION:Page E AVDEC SECTION:Page F
VD SECTION:Page G AD SECTION:Page H WMA SECTION:Page I
CPU SECTION:Page J

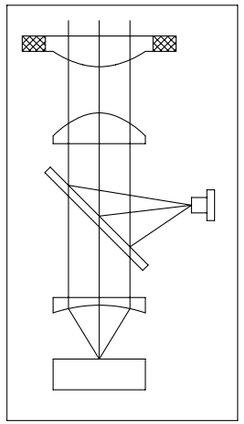


DVD-RV32P/PC
CPU SECTION
(MODULE P.C.B.(6/6))
SCHEMATIC DIAGRAM





DVD-RV32P/PC
FRONT1,FRONT2
SCHEMATIC DIAGRAM



OPTICAL
PICK UP UNIT

TERMINAL P.C.B.

FP5201

1	GND
2	P IN(CD)
3	T2(CD)
4	FE2(CD)
5	V REF2.2(CD)
6	T1(CD)
7	LD(+)(CD)
8	GND
9	FE1
10	VCC 5V
11	TB(DVD)
12	TC(DVD)
13	TD(DVD)
14	TA(DVD)
15	V REF2.2(DVD)
16	P IN(DVD)
17	GAIN H/L
18	F2(DVD)
19	F1(DVD)
20	RF N
21	RF P
22	GND
23	GND
24	LD(+)(DVD)
25	GND
26	3.3V HFM
27	T(-)
28	F(-)
29	F(+)
30	T(+)

FP5202

A GND	50
HFMON	49
GAIN H/L	48
A GND	47
F BAL	46
T BAL	45
A GND	44
FEP ENB	43
FEP CLK	42
FEP DATA	41
OFTR	40
BDO	39
A GND	38
TE	37
FE	36
FS	35
VHALF	34
A +3.3V	33
A +3.3V	32
A GND	31
ARF	30
NARF	29
TST SG	28
RF ENV	27
A +5V	26
V REF2	25
LD CUR	24
IN SW	23
TRAY/TRV	22
MUTE3	21
TRVS IN	20
TRAY REF	19
TRAY IN	18
SPD IN	17
TR IN	16
FO IN	15
DMV	14
MUTE4	13
MUTE12	12
M GND	11
M GND	10
M GND	9
M GND	8
M +9V	7
M +9V	6
M +9V	5
D +5V	4
D +5V	3
D GND	2
D GND	1

FP2001

1	A GND
2	HFMON
3	GAIN H/L
4	A GND
5	F BAL
6	T BAL
7	A GND
8	FEP ENB
9	FEP CLK
10	FEP DATA
11	OFTR
12	BDO
13	A GND
14	TE
15	FE
16	FS
17	VHALF
18	A +3.3V
19	A +3.3V
20	A GND
21	ARF
22	NARF
23	TST SG
24	RF ENV
25	A +5V
26	V REF2
27	LD CUR
28	IN SW
29	TRAY/TRV
30	MUTE3
31	TRVS IN
32	TRAY REF
33	TRAY IN
34	SPD IN
35	TR IN
36	FO IN
37	DMV
38	MUTE4
39	MUTE12
40	M GND
41	M GND
42	M GND
43	M GND
44	M +9V
45	M +9V
46	M +9V
47	D +5V
48	D +5V
49	D GND
50	D GND

MODULE P.C.B.

PS4201

1	AUDIO DIGITAL
2	D GND
3	TRAY/TRV
4	TRV-SW(+)
5	TRAY MUT
6	TRAY DRV
7	TRAY REF
8	A DAC GND
9	MIX L
10	A DAC GND
11	MIX R
12	A DAC 5V
13	A MUT
14	Z FLAG

PS3201

1	CB/B
2	V GND
3	DSP CLK
4	STATUS
5	CMD
6	D GND(M9V-CTL)
7	M +9V
8	M GND
9	D +5V
10	D GND
11	D +5V
12	D GND
13	D +1.8V
14	D GND
15	A +5V
16	A GND
17	Y
18	V GND
19	C
20	V GND
21	CR/R
22	V GND/G

P1001

JK4401

PP4301

1	AUDIO DIGITAL
2	D GND
3	TRAY/TRV
4	TRV-SW(+)
5	TRAY MUT
6	TRAY DRV
7	TRAY REF
8	A DAC GND
9	MIX L
10	A DAC GND
11	MIX R
12	A DAC 5V
13	A MUT
14	Z FLAG

PP3201

1	CB/B
2	V GND
3	DSP CLK
4	STATUS
5	CMD
6	D GND(M9V-CTL)
7	M +9V
8	M GND
9	D +5V
10	D GND
11	D +5V(3.3V)
12	D GND
13	D +1.8V
14	D GND
15	A +5V
16	A GND
17	Y
18	V GND
19	C
20	V GND
21	CR/R
22	V GND/G

MECHANISM UNIT

TRAY
OPEN
SWITCH

P6005

1	TRAY-SW(-)
2	D GND

PS6001

1	SLEEP
2	POWER-SW
3	EFCT-LED
4	NSW +3.3V
5	REMOCON
6	D GND

FIP

PS6002

1	STBY-LED
2	D GND
3	PA21
4	PA01
5	PA11
6	
7	B1
8	B2
9	B3
10	B4

MOTHER P.C.B.

PP6001

1	SLEEP
2	POWER-SW
3	ONE TOUCH
4	NSW +3.3V
5	REMOCON
6	D GND

FRONT2 P.C.B.

PP6002

1	STBY-LED
2	D GND
3	PA21
4	PA01
5	PA11
6	
7	B1
8	B2
9	B3
10	B4

FRONT1 P.C.B.

DVD-RV32P/PC
INTERCONNECTION
SCHEMATIC DIAGRAM

F
E
D
C
B
A

1 2 3 4 5 6 7 8 9 10

MODULE P.C.B.

Transistor	
Q3101	C-2 F
Q3106	C-3 F
Q3111	C-2 F
Q3116	C-3 F
Q3211	B-5 F
transistor - resistor	
QR3301	B-5 F
QR6301	D-4 C
Integrated Circuit	
IC2001	C-5 F
IC2061	C-3 C
IC3001	D-6 C
IC3061	D-2 F
IC3071	D-2 F
IC3091	C-1 F
IC3201	B-4 C
IC3301	B-3 C
IC4001	C-4 C
IC4021	D-5 F
IC4031	C-4 F
IC4041	D-5 F
IC4051	D-5 F
IC4061	D-5 F
IC4201	B-3 F
IC4211	A-2 F
IC6201	E-4 C
IC6221	E-1 C
IC6222	E-1 C
IC6251	B-1 C
IC6301	D-4 C
IC6302	E-5 F
IC6303	E-2 C
IC6501	B-2 F
Test Point	
CP3001	F-2 F
CP3002	F-2 F
CP3003	F-2 F
CP3004	F-2 F
CP3005	F-2 F
CP3006	F-2 F
CP3007	F-2 F
CP3008	F-2 F
CP3009	F-2 F
CP3010	F-2 F
CP3011	D-5 C
CP3012	D-5 C
CP4001	D-5 F
CP4002	C-4 C
CP4003	D-5 F
CP4004	D-5 F
CP4005	C-5 F
CP4006	C-5 F
CP4007	C-5 F
CP4008	C-5 F
CP4009	C-5 F
CP4010	C-5 F
CP4011	C-4 C
CP4012	C-4 C
CP4013	C-5 C
CP4014	C-4 F
CP4015	C-4 F
CP4016	C-4 F
CP4017	C-4 F
CP4018	C-4 F
CP4019	D-5 C
CP4020	D-5 C
CP4021	D-5 C
CP4022	D-5 C
CP4023	D-4 C
CP4024	C-5 F
CP4025	C-4 F
CP4026	C-4 C
CP4027	C-4 C
CP4028	C-4 C
CP4201	B-3 F
CP4202	B-3 F
CP4203	B-3 F
CP4204	B-3 F
CP6201	E-5 C
CP6202	E-5 C
CP6203	E-5 C
CP6204	E-5 C
CP6205	E-5 C
CP6206	E-5 C
CP6207	E-5 C
CP6208	E-4 F
CP6209	E-5 C
CP6210	E-5 C
CP6211	E-4 C
CP6212	E-5 C
CP6213	F-5 C
CP6214	F-4 C
CP6215	F-4 C
CP6216	F-4 C
CP6217	F-4 C
CP6218	F-4 C
CP6219	F-4 C
CP6220	D-3 C
CP6221	E-3 C
CP6222	E-3 C
CP6223	E-3 C
CP6224	E-3 C
CP6225	E-3 C
CP6226	E-5 F
CP6227	E-3 C
CP6228	E-3 C
CP6229	E-3 C
CP6230	E-3 C
CP6231	F-2 C
CP6232	F-2 C
CP6233	E-4 C
CP6234	E-4 C
CP6235	E-5 F
CP6236	E-4 C
CP6237	E-5 F
CP6301	D-3 C
CP6302	E-5 C
CP6303	E-5 C
CP6304	E-5 C
CP6305	E-5 C
CP6306	F-4 C
CP6307	F-4 C
CP6308	F-4 C
CP6309	F-4 C
CP6310	F-4 C
CP6311	F-4 C
CP6312	E-4 F
CP6313	E-4 F
CP6314	F-4 C
CP6315	F-4 C
CP6316	F-4 C
CP6317	F-4 C
CP6318	F-4 C
CP6319	F-4 C
CP6320	E-5 F
CP6321	E-5 F
CP6322	E-4 F
CP6323	E-5 F
CP6324	E-4 F
CP6325	E-4 F
CP6326	E-4 F
CP6327	E-4 F
CP6328	E-3 F
CP6329	E-3 F
CP6330	E-3 F
CP6331	E-3 F
CP6332	E-3 F
CP6333	E-3 F
CP6334	E-3 F
CP6335	E-3 F
TC2002	C-5 F
TC2003	C-5 F
TC2004	C-6 F
TC2011	D-7 F
TC2012	D-7 F
TC2013	D-7 F
TC2014	D-7 F
TC2015	C-7 F
TC2016	C-7 F
TC2017	C-7 F
TC2018	C-7 F
TC2019	C-7 F
TC2020	C-7 F
TC2021	C-7 F
TC2022	C-7 F
TC2023	C-7 F
TC2024	C-7 F
TC2025	D-7 F
TC2026	C-7 F
TC2027	C-7 F
TC2028	C-7 F
TC2029	C-7 F
TC2030	C-7 F
TC2031	C-7 F
TC2032	C-7 F
TC2033	C-7 F
TC2034	C-7 F
TC2035	C-7 F
TC2036	C-7 F
TC2037	C-7 F
TC2038	C-7 F
TC2039	C-7 F
TC2040	B-7 F
TC2041	B-7 F
TC2042	B-7 F
TC2043	B-7 F
TC2044	B-7 F
TC2045	B-7 F
TC2046	B-7 F
TC2047	B-7 F
TC2048	B-7 F
TC3201	A-5 F
TC3202	A-6 F
TC3203	A-6 F
TC3204	A-6 F
TC3205	A-6 F
TC3206	B-6 F
TC3207	B-6 F
TC3208	B-6 F
TC3209	B-5 F
TC3303	A-5 F
TC3304	A-5 F
TC3305	A-6 F
TC4201	A-3 F
TC4202	A-3 F
TC4203	A-4 F
TC4204	A-4 F
TC4205	A-4 F
TC4206	A-4 F
TC4207	A-4 F
TC4208	A-4 F
TC4209	A-4 F
TC4210	A-4 F
TC4211	B-5 F
TC4212	B-4 F
TC4213	B-4 F
TC4214	B-4 F
TC4215	B-4 F
TC4216	B-4 F
TC4217	B-4 F
TC4218	B-3 F
TC4219	B-3 F
TC4220	B-3 F
TC6201	F-6 F
TC6230	A-6 C
TC6231	A-7 C
TC6232	A-7 C
TC6233	A-7 C
TC6234	A-7 C
TC6235	A-7 C
TC6236	A-6 C
TC6237	A-6 C
TC6238	A-6 C
TC6311	E-5 F
TL2004	D-1 C
TL5202	D-1 C
TL5205	E-1 C
TL5208	D-1 C
TL6201	F-3 C
TL6202	F-3 C
TL6203	F-3 C
TL6204	F-3 C
TL6205	F-4 C
TL6206	F-4 C
TL6207	F-3 C
TL6208	F-4 C
TL6209	F-4 C
TL6210	F-4 C
TP2004	D-7 F
TP3271	A-3 C
TP3272	A-3 C
TP3273	A-3 C
TP3274	A-3 C
TP3275	A-3 C
TP3276	A-3 C
TP3277	A-3 C
TP3278	A-3 C
TP3279	A-4 C
TP3280	A-4 C
TP3281	A-4 C
TP3282	A-4 C
TP4002	C-5 C
TP4003	C-5 C
TP4004	C-5 C
TP4005	C-5 C
TP4006	D-5 C
TP4007	D-5 C
TP4008	D-5 C
TP4271	A-4 C
TP4272	A-4 C
TP4273	A-4 C
TP4274	A-4 C
TP4275	A-4 C
TP4276	A-5 C
TP4277	A-5 C
TP4278	A-5 C
TP4279	A-5 C
TP4280	A-5 C
TP4281	A-5 C
TP4282	A-5 C
TP4283	A-5 C
TP4284	A-5 C
TP4285	A-5 C
TP4286	A-5 C
TP4287	A-5 C
TP4288	A-5 C
TP4289	A-6 C
TP5202	D-7 F
TP5205	E-7 F
TP5208	D-7 F
TP6201	F-6 F
TP6202	F-5 F
TP6203	F-5 F
TP6204	F-5 F
TP6205	F-5 F
TP6206	F-5 F
TP6207	F-5 F
TP6208	F-5 F
TP6209	F-5 F
TP6210	F-4 F
TP6251	B-6 F
TP6252	B-6 F
TP6253	A-7 F
TP6254	B-7 F
TP6255	A-6 F
TP6256	A-6 F
TP6257	A-6 F
TP6258	A-6 F
TP6259	B-6 F
TP6271	E-1 C
TP6272	A-2 C
TP6273	A-2 C
TP6274	A-2 C
TP6275	A-2 C
TP6276	A-2 C
TP6277	A-2 C
TP6278	A-3 C
TP6279	A-3 C
TP6501	C-2 F
TP6503	B-2 F
TP6504	B-2 F
TP6505	C-2 F
Connector	
FP2001	C-1 C
FP3202	A-2 C
FP3203	A-3 C
FP4202	A-5 C
PS3201	A-6 F
PS4201	A-4 F
PS6201	F-2 C

ADDRESS INFORMATION
C...COMPONENT SIDE
F...FOIL SIDE

MOTHER P.C.B.

Transistor	
Q1021	C-2
Q1051	C-1
Q1052	B-2
Q1062	C-2
Q1115	D-2
Q1125	D-2
Q1126	D-2
Q1141	E-1
Q1155	E-2
Q3541	B-5
Q3551	B-4
Q3561	B-4
Q4392	B-8
Q4411	B-6
Q4415	B-6
Q4421	A-7
Q4425	B-7
Q4481	A-8
Q4482	A-7
Q4483	A-7
Q6091	E-2
Q6095	E-6

Transistor - resistor	
QR1115	E-2
QR1156	E-1
QR3521	B-6
QR3522	B-4
QR3571	B-3
QR3572	B-3
QR3573	C-4
QR4391	B-8
QR4393	B-8
QR4394	B-8
QR6052	E-4
QR6053	E-4
QR6054	E-4
QR6055	E-4
QR6056	E-4

Integrated Circuit	
IC1101	D-1
IC1151	E-1
IC3501	B-4
IC4311	B-7
IC4381	B-7
IC6001	E-4
IC6011	E-5

Test Point	
TC5056	F-4
TC6001	F-2
TC6002	F-2
TC6003	F-2
TC6004	E-2
TC6005	F-2
TC6006	E-2
TC6011	F-7
TC6012	F-7
TC6013	F-7
TC6014	F-7
TC6015	F-7
TC6017	F-7
TC6018	F-7
TC6019	F-7
TC6020	F-7
TC6021	F-2
TC6022	F-1
TC6023	F-1
TC6024	F-1
TC6041	F-3
TC6042	F-3
TC6043	F-4
TC6044	F-4
TC6045	F-4
TC6046	F-4
TC6047	F-4
TC6048	F-4
TC6049	F-4
TC6050	F-4
TC6051	F-5
TC6052	F-5
TC6053	F-5
TC6054	F-5
TC6055	F-5
TC6057	F-5
TC6058	F-5
TC6059	F-5
TC6060	F-5
TC6061	F-5
TC6062	F-5
TC6063	F-5
TC6064	F-5
TC6065	F-5
TC6066	F-5
TC6067	F-5
TC6068	F-5
TC6069	F-5
TC6070	F-5
TC6071	F-6
TC6081	E-5
TC6082	E-5
TC6083	E-5
TC6084	E-5
TL1101	E-1
TL1102	E-1
TL1103	E-2
TL1104	E-2
TL1105	E-2
TL1106	D-3
TL1107	D-3
TL1108	E-2
TL1111	D-2
TL1112	E-2
TL1113	E-3
TL1114	E-1
TL1115	E-2
TL1116	F-2
TL1117	E-1
TL1118	E-1
TL4301	B-7
TL4302	B-8
TL4311	B-8
TL4312	B-7
TL4481	A-7
TL4482	A-8
TP1101	E-1
TP1102	E-1
TP1103	E-3
TP1104	E-2
TP1105	E-3
TP1106	D-3
TP1107	D-3
TP1108	E-2
TP1111	D-3
TP1112	E-2
TP1113	E-2
TP1114	E-1
TP1115	E-2
TP1116	F-1
TP1117	F-1
TP1118	E-2

Connector	
DL6001	F-4
DZ1001	A-2
JK3571	A-3
JK4401	A-6
P1001	A-1
P6005	E-6
PP3201	E-7
PP3801	A-4
PP4301	E-8
PS6001	F-2
PS6002	F-7
PS6003	F-1

ADDRESS INFORMATION

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TO FP5202
TERMINAL P.C.B.
FP2001

DGND	50	TC2048			
DGND	49	TC2047	LB2043 J0JHC0000045	D+5V	VD
D+5V	48				
D+5V	47	TC2046			
M+9V	46				
M+9V	45	TC2045	LB2042 J0JHC0000045	M+9V	VD
M+9V	44				
MGND	43			MGND	VD
MGND	42				
MGND	41				
MGND	40	TC2044	LB2041 J0JBC0000015		
MUTE12	39	TC2043	LB2040 J0JBC0000015	TRAYMUT	AD
MUTE4	38	TC2042	LB2039 J0JBC0000015		
DMV/FG	37	TC2041	LB2038 J0JBC0000015		
FOIN	36	TC2040	LB2037 J0JBC0000015		
TRIN	35	TC2039	LB2036 J0JBC0000015		
SPDIN	34	TC2038	LB2035 J0JBC0000015	TRAYDRV	AD
TRAYIN	33	TC2037	LB2034 J0JBC0000015	TRAYREF	AD
TRAYREF	32	TC2036	LB2033 J0JBC0000015		
TRVSIN	31	TC2035	LB2032 J0JBC0000015		
MUTE3	30	TC2034	LB2031 J0JBC0000015	TRAY/TRV	AD
TRAY/TRV	29	TC2033	LB2030 J0JBC0000015	IN-SW	AD/CPU
IN-SW	28	TC2032	LB2029 J0JBC0000015		
LDCUR	27	TC2031			
VREF2	26	TC2030	LB2028 J0JBC0000015	A+5V	VD
A+5V	25	TC2029	LB2027 J0JBC0000015		
RFENV	24	TC2028			
TSTSG	23	TC2027	LB2026 J0JBC0000015		
NARF	22	TC2026	LB2025 J0JBC0000015		
ARF	21	TC2025			
AGND	20	TC2024	LB2024 J0JBC0000015		
A+3.3V	19				
A+3.3V	18	TC2023	LB2023 J0JBC0000015		
VHALF	17	TC2022	LB2022 J0JBC0000015		
FS	16	TC2021	LB2021 J0JBC0000015		
FE	15	TC2020	LB2020 J0JBC0000015		
TE	14				
AGND	13	TC2019	LB2019 J0JBC0000015		
BDO	12	TC2018	LB2018 J0JBC0000015		
OFTR	11	TC2017	LB2017 J0JBC0000015		
FEPDATA	10	TC2016	LB2016 J0JBC0000015		
FEPCLK	9	TC2015	LB2015 J0JBC0000015		
FEPENB	8				
AGND	7	TC2014	LB2014 J0JBC0000015		
TBAL	6	TC2013	LB2013 J0JBC0000015		
FBAL	5				
AGND	4	TC2012	LB2012 J0JBC0000015		
GAINH/L	3	TC2011	LB2011 J0JBC0000015	HFMON	CPU
HFMON	2				
AGND	1				

to DL1 Module

L2001 G1C100K00020 (LB2016T100K)
C2002 4V100
AGND AVDEC/AD/V

R2013 0
C2021 8.2n
R2016 0
TC2002
R2012 56k
TC2003
R2015 22k
R2017 3.3k
R2018 22k
R2020 22k
R2022 12k
R2011 3.3k
R2019 3.3k
C2022 39n
C2023 680p
C2024 680p
C2025 47n
C2026 470
R2024 12k
R2023 3.3k
R2021 3.3k
R2014 3.3k
TL5208 TP5208

R2034 18k
R2029 4.7k
R2028 4.7k
R2031 6.8k
R2032 6.8k
R2033 6.8k
D2001 MA2J11100L
R2035 8.2k
R2030 10k
C2030 470p
C2033 3.3n
C2032 47n
C2031 3.3n
C2029 1.5n
C2028 1.5n
C2034 0.1
R2026 47k
C2027 3.3n

C2003 0.1
C2010 0.1
TC2004
C2009 0.1
C2011 0.1
C2036 3.9n
R2037 33k
C2046 33n
C2048 3.3n
C2004 0.1
R2047 100k
R2048 100k
R2036 6.8k
C2035 47n
C2037 1n
R2038 1k
C2038 0.47
R2040 0
C2039 0.01
R2041 47
C2041 2.2
C2044 0.1
C2045 100P
C2047 0.1
C2042 0.1
C2043 0.1

IC2001
MN677203NP1
(NODC)

IC2061
C3ABKG000057
(M54V16256B4R)
(4M_DRAM)
RA2061 (33×2)
C2061 10V10
C2062 0.1
C2064 0.1
C2063 0.1
C2008 0.1
R2061 33
C2007 0.1

TL2004 TP2004
LB2001 J0JHC0000045
C2001 6.3V330
D+3.3V NODC/AVDEC/VD/AD/CPU
DGND VD

C2005 0.1
R2051 100k
C2052 1n
C2051 0.01
C2006 0.1
C2015 0.1

AVRTM	AVDEC	
STD0	AVDEC	
STD1	AVDEC	
STD2	AVDEC	
STD3	AVDEC	
STD4	AVDEC	
STD5	AVDEC	
STD6	AVDEC	
STD7	AVDEC	
STCLK	AVDEC	
STENABLE	AVDEC	
STVALID	AVDEC	
NRST	AVDEC	CPU
CLK16M	AD	
WAITNODC	CPU	
NINT	CPU	
CPUDT[0]	CPU	
CPUDT[1]	CPU	
CPUDT[2]	CPU	
CPUDT[3]	CPU	
CPUDT[4]	CPU	
CPUDT[5]	CPU	
CPUDT[6]	CPU	
CPUDT[7]	CPU	
NWEL	CPU	AVDEC
NRE	CPU	AVDEC
NODCCS	CPU	
CPUADR[0]	CPU	
CPUADR[1]	CPU	
CPUADR[2]	CPU	
CPUADR[3]	CPU	
CPUADR[4]	CPU	
CPUADR[5]	CPU	
CPUADR[6]	CPU	
CPUADR[7]	CPU	
CPUADR[8]	CPU	
CPUADR[9]	CPU	
CPUADR[10]	CPU	
CPUADR[11]	CPU	
CPUADR[12]	CPU	
CPUADR[13]	CPU	
CPUADR[14]	CPU	
CPUADR[15]	CPU	
CPUADR[16]	CPU	
CPUADR[17]	CPU	

NOTE:DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERRING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST. AND MAY BE SLIGHTLY DIFFERNT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

DVD-RV32P/PC
NODC SECTION
(MODULE P.C.B.(1/6))
SCHEMATIC DIAGRAM

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DL6001
A2BB00000098
(13-BT-196GNK)

IC6001
MN101C35DCM
(8bit MICON)

IC6011
C0EBE0000105
(XC61CN2702MR)
(RST)

Q6091
2SC3311ASA
(2SC3311A-STA)
(POWER CTL.)

Q6095
2SD1996-RSTA
(FL DRIVE)

QR6053
B1GDCFEM0002
(DTA123JK-T96)
(DRIVE)

QR6054
B1GDCFEM0002
(DTA123JK-T96)
(DRIVE)

TO PP6001
FRONT 2 P.C.B.
PS6001

SLEEP	1
POWER-SW	2
EFCT-LED	3
NSW+3.3V	4
REMOCON	5
DGND	6

TO PP6002
FRONT 1 P.C.B.
PS6002

———	1
DGND	2
PA21	3
PA01	4
PA11	5
DGND	6
B1	7
B2	8
B3	9
B4	10

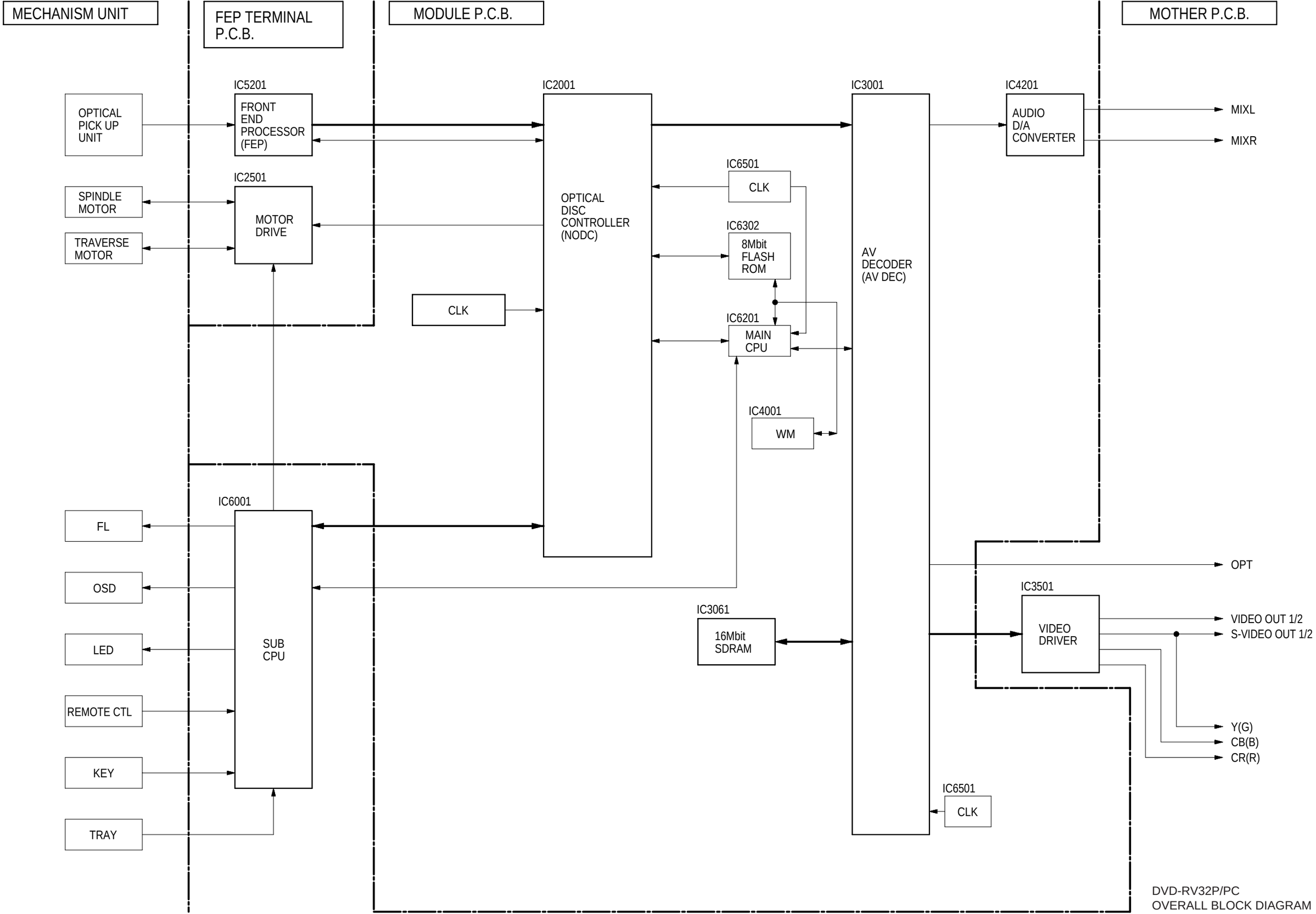
B1(CW=PLUS)
B2(CCW=PLUS)
B3(CW=L)
B4(CCW=L)

TO OPEN SWITCH
P6005

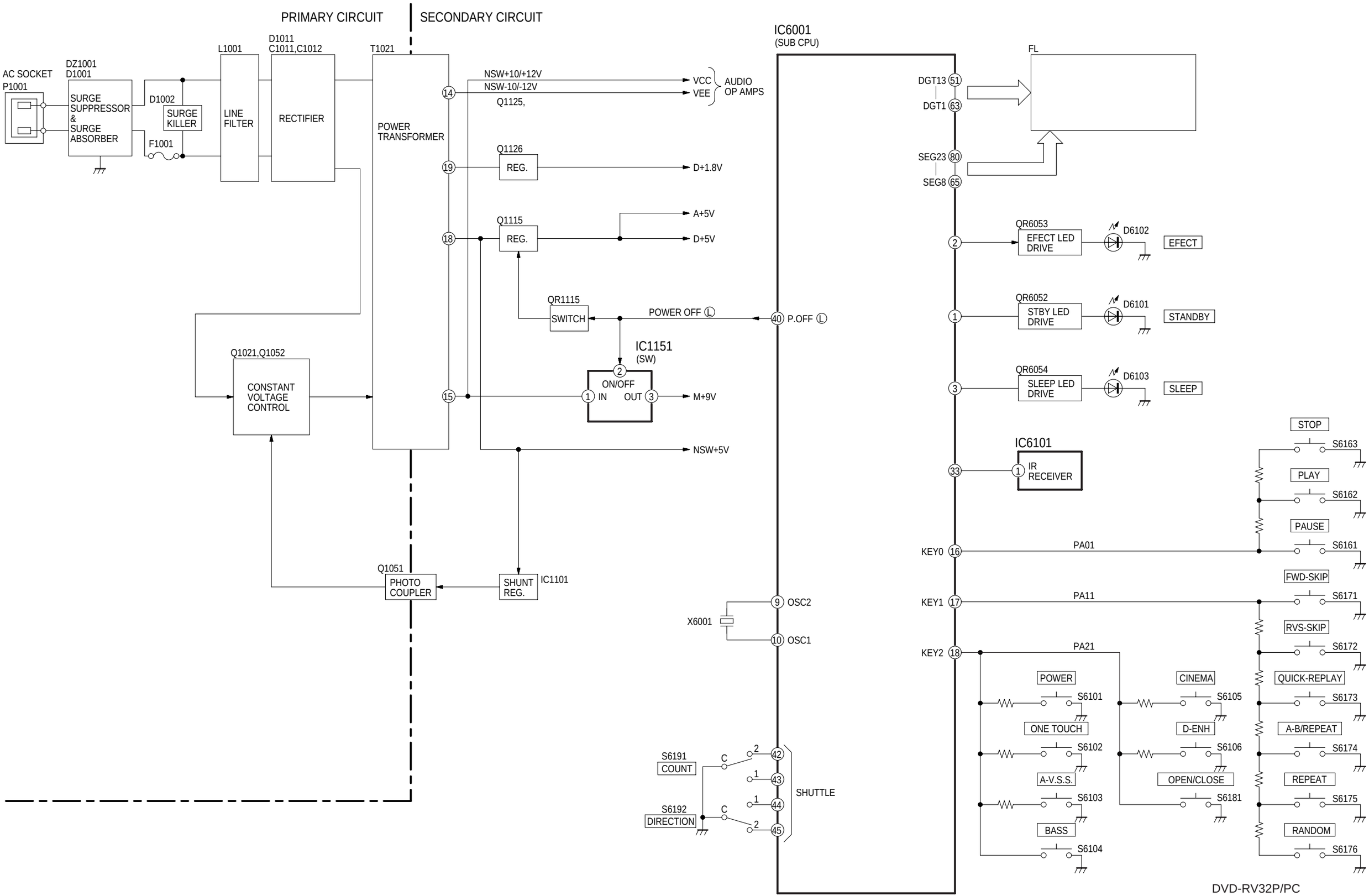
1	TRAY-SW-
2	DGND

NOTE:DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST. AND MAY BE SLIGHTLY DIFFERNT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

DVD-RV32P/PC
OPERATION & FL SECTION
(MOTHER P.C.B.(4/4))
SCHEMATIC DIAGRAM



DVD-RV32P/PC
OVERALL BLOCK DIAGRAM



DVD-RV32P/PC
POWER BLOCK DIAGRAM

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NOTE:DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST. AND MAY BE SLIGHTLY DIFFERNT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS. USE ONLY THE SAME TYPE.

DVD-RV32P/PC
POWER SECTION
(MOTHER P.C.B.(1/4))
SCHEMATIC DIAGRAM

IC5201 (FEP)

IC2001 (NODC)

OPTICAL PICK UP UNIT

PHOTO DETECTOR

B1 B2 A1 A2 A4 A3 B4 B3

HEAD AMP

VIN7 40
VIN8 41
VIN1 43
VIN2 44
VIN3 45
VIN4 46
VIN5 38
VIN6 39
VIN9 47
VIN10 48

AMP
AMP
EQ HPF COMP. DEFFERENTIAL PHASE DET.
EQ HPF COMP.
EQ HPF COMP. DEFFERENTIAL PHASE DET.
EQ HPF COMP.
AMP
AMP
AMP
AMP
FBAL

PEAK
HOLD

36 RFENV 35
13 TE 31
7 TBAL 4
20 FE 30
6 FBAL 1

TBAL

VREF
VREF

RSCL
S LINE

LASER DIODE
Q5211 LD DRIVE 3
2
LASER DIODE
Q5215 LD DRIVE 5
4
LPC AMP

16 BDO 17
15 OFTR 16
21 FS 32
26 FLTOP 47
27 FLTON 49

RFINP 32
RFINN 33
TESTSG
VREF
DCRF

DPDOFT DET.
LEVEL CONT.
POFLT

ENV DET.
CSAG
DCAGC

AGC CONT.
BDOSL
AGCG

MIRROR DET.
LEVEL CONT.
BDO DET.
LEVEL CONT.

FC CONT.
BOOST CONT.
EQ
VGA
GD CONT.

SCK 10
SEN 9
STDI0 11
S-IF
REG

STDI 21
SEN 18
SCK 20

A
B

DVD-RV32P/PC
SERVO BLOCK DIAGRAM

RF SIGNAL
MOTOR DRIVE SIGNAL
TRACKING ERROR SIGNAL
FOCUS ERROR SIGNAL

IC2001 (NODC)

IC2501
(MOTOR DRIVE)

TRSDRV
TRIN
FOIN
SPDIN
DMV
FROM IC6001-27,28PIN
LDIN
BIAS1
BIAS2
VIN1
VIN2
VIN3
OPOUT
TRDM GI02
MUTE2
CH3 MUTE
FODM GI01
MUTE3
CH1,2 MUTE

LEVEL SHIFT
VO4+
VO4-
OPIN+
VO3+
VO3-
OPIN-
VO1+
VO1-
VO2+
VO2-

M2502
TRAVERS MOTOR
M2501
SPINDLE MOTOR

IC2511-11,12,13,14
7.2Vp-p(20usec./div.)

OPTICAL PICK UP UNIT
ACTUATOR
FOCUS COIL
TRACKING COIL
ACT F+
ACT F-
ACT T+
ACT T-

IC2061
(4MDRAM)
DQ0
DQ15
A0
A8
DRAMD
DRAMA

IC6001
(SUB CPU)
CNT
LD CNT
CH4 MUTE
MUTE4
TRAY/TRV
TRAY/MUT
FROM IC6201-48PIN
SW2501
TRAY CLOSE
FROM P6005-1PIN
TRAY OPEN

DVD-RV32P/PC
SERVO BLOCK DIAGRAM

DVD-RV32P/PC
SERVO BLOCK DIAGRAM

MAIN SIGNAL PATH

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IC2501
COGBG0000020
(BA5823FM-E2)
or
COGBG0000033
(BA5833FM-E2)
(MOTOR DRIVE)

1	BIAS1	LDCNT	28
2	VIN1	MUTE3	27
3	VIN2	TRIN	26
4	OPIN+	BIAS2	25
5	OPIN-	LDIN	24
6	OPOUT	VIN3	23
7	GND(Pre)	PREVCC	22
	FIN	FIN	
8	VCC(ch1.2)	VCC(ch3.4)	21
9	MUTE12	MUTE4	20
10	GND(ch1.2)	GND(ch3.4)	19
11	VO2-	VO3-	18
12	VO2+	VO3+	17
13	VO1-	VO4-	16
14	VO1+	VO4+	15

R2502 15k
C2507 0.1
R2503 15k
C2508 0.1
C2506 0.1
C2501 6.3V 220
C2504 0.1
C2509 16V10
C2505 0.1
C2502 16V100
C2513 0.1
C2503 16V22
R2507 6.8
R2505 82k
R2504 82k

TC2522
TC2523
DM MOTOR
M2501
C2511 0.1
TC2525
TC2524
TRVS MOTOR
M2502
C2512 0.1

RA2501 (47k×4)

SW2501 RSH1A048-A

TO FP2001 MODULE P.C.B. (ADSC) FP5202

TP5201	1	DGND	
TP5202	2	DGND	
	3	D+5V	
TP5203	4	D+5V	
	5	M+9V	
	6	M+9V	
TP5204	7	M+9V	
	8	MGND	
	9	MGND	
	10	MGND	
	11	MGND	
TP5205	12	MUTE3	
TP5206	13	MUTE1	
TP5207	14	DMV	
TP5208	15	FOIN	
TP5209	16	TRIN	
TP5210	17	SPDIN	
TP5211	18	TRAYIN	
TP5212	19	TRAYREF	
TP5213	20	TRVSIN	
TP5214	21	MUTE2	
TP5215	22	TRAY/TRV	
TP5216	23	IN-SW	
TP5217	24	LDCUR	
TP5218	25	VREF2	
TP5238	26	A+5V	
TP5219	27	RFENV	
TP5220	28	TSTSG	
TP5221	29	NARF	
TP5222	30	ARF	
TP5223	31	AGND	
TP5224	32	A+3.3V	
	33	A+3.3V	
TP5225	34	VHALF	
TP5226	35	FS	
TP5227	36	FE	
TP5228	37	TE	
	38	AGND	
TP5229	39	BDO	
TP5230	40	OFTR	
TP5231	41	FEPDATA	
TP5232	42	FEPCLK	
TP5233	43	FEPENB	
	44	AGND	
TP5234	45	TBAL	
TP5235	46	FBAL	
	47	AGND	
TP5236	48	GAINH/L	
TP5237	49	HFMON	
	50	AGND	

TO OPTICAL PICKUP UNIT FP5201

T+	30	TC5225
F+	29	TC5224
F-	28	TC5223
T-	27	TC5222
3.3VHFM	26	TC5221
GND	25	
LD+(DVD)	24	TC5220
GND	23	
GND	22	
RFP	21	TC5219
RFN	20	TC5218
F1(DVD)	19	TC5217
F2(DVD)	18	TC5216
GAINH/L	17	TC5215
	16	
VREF2.2(DVD)	15	TC5213
TA(DVD)	14	TC5212
TD(DVD)	13	TC5211
TC(DVD)	12	TC5210
TB(DVD)	11	TC5209
VCC5V	10	TC5208
FE1	9	
GND	8	
LD+(CD)	7	TC5207
T1(CD)	6	TC5206
VREF2.2(CD)	5	TC5205
FE2(CD)	4	TC5204
T2(CD)	3	TC5203
PIN(CD)	2	TC5202
GND	1	TC5201

C5251 0.1
C5252 10V10
LB5206 VLP0323A601R
C5253 4.7k
LB5205 VLP0323A601R
LB5204 VLP0155-T
LB5203 VLP0155-T
C5223 0.1
LB5201 JALBK2HS470T

C5225 0.1
C5224 0.1
TC5230
R5217 47k
R5213 47k
TC5229
R5212 27
C5211 6.3V47
R5211 2.2
R5216 27
C5215 6.3V47
R5215 2.2
Q5211 2SB1115-T (LD DRIVE)
R5214 22k
Q5215 2SB1115-T (LD DRIVE)
TC5227

R5236 0
C5240 560p
R5235 1M
C5239 0.1
C5238 0.22
C5226
C5237 0.1
C5236 1000p
C5201 16V10
L5201 ELJEA100KF
C5204 0.1
C5202 16V10
L5202 ELJEA100KF
C5235 390p
C5234 2200p
C5233 0.1
R5232 12k
C5232 0.1

C5203 0.1
C5221 0.1
C5205 1000p
C5206 1000p
C5207 1000p
C5208 1000p
R5221 8.2k
R5222 8.2k

IC5201
AN8708FHK
(FEP)

37	VCC1	BDOSL	24
38	VIN5	OFTSL	23
39	VIN6	VHALF	22
40	VIN7	FS	21
41	VIN8	FE	20
42	VREF2	GND2	19
43	VIN1	RSCL	18
44	VIN2	VDD	17
45	VIN3	BDO	16
46	VIN4	OFTR	15
47	VIN9	VSS	14
48	VIN10	TE	13

36	35	34	33	32	31	30	29	28	27	26	25	1	2	3	4	5	6	7	8	9	10	11	12
RFENV	PEAK	DOFF	RFINN	RFINP	TESTSG	AGCG	DCAGC	SAG	FLTON	FLTOP	VCC2	GND1	LPC1	LPC01	LPC2	LPC02	FBAL	TBAL	PDFLT	SEN	SCK	STDIO	VREF1

C5242 4700p
C5231 100p
RA5231 (100×4)
R5203 56k
R5204 22k
D5251 MA2J72800L
QR5251 UN2121-TX (SWITCHING 3.3VHFM)
L5251 ELJEA100KF
R5252 1k

DVD-RV32P/PC
TERMINAL
SCHEMATIC DIAGRAM

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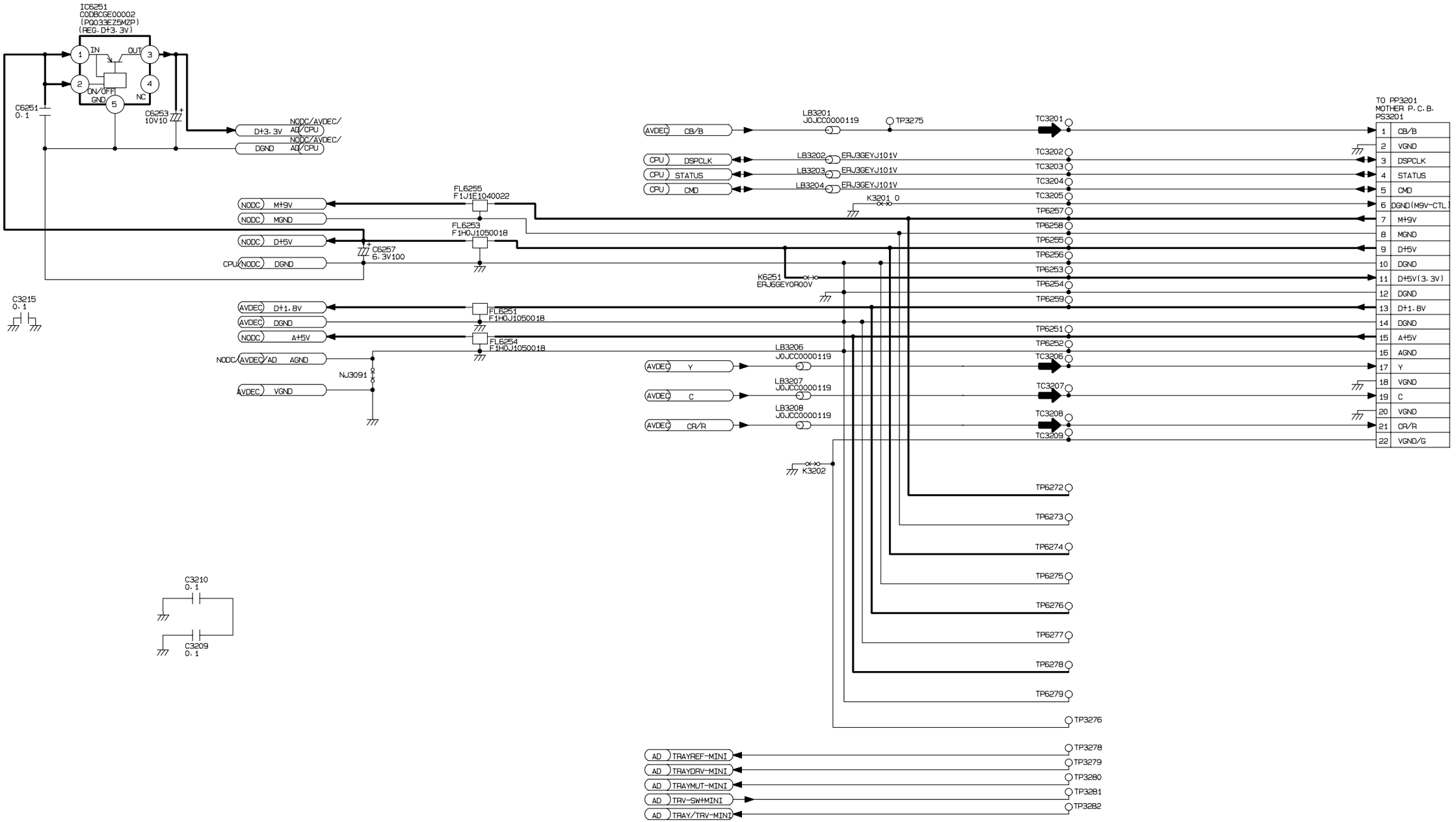
VIDEO SIGNAL PATH



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DVD-RV32P/PC
VIDEO-DAC SECTION
(MODULE P.C.B.(3/6))
SCHEMATIC DIAGRAM

FEP TERMINAL P.C.B.

MODULE P.C.B.

OPTICAL PICK UP UNIT

IC5201
(FEP)
VIN1 43
VIN2 44
VIN3 45
VIN4 46
VIN5 47
VIN6 48
VIN7 40
VIN8 41
VIN9 42
VIN10 48
VREF
VREF
RF ENV 36
HOLD
RFIN P/N
DCRF

IC2001
(NODC)
RF ENV 95
DD0 104
DD7 95
CPUDT0 74
CPUDT7 81
DATA
73
72
ADDRESS
CPU ADR0 70 - CPU ADR17 53

IC3001
(AV DECORDER)
STD0 83
STD1 82
STD2 81
STD3 80
STD4 78
STD5 77
STD6 76
STD7 75

IC6302
(8M FLASH ROM)
DQ0 29
DQ45 45
DATA
A0 25
A18 16
ADDRESS
11 28

HA1 35
HA11 47
ADDRESS

IC6201
(MAIN CPU)
13 - 16 26 - 33 35 - 42
A0 - A19
ADDRESS
DATA
D0 - D15
84 - 91 93 - 100
7
18
2
3
XCS 32
HCLK 33
NRE 31
NWEL 30

HD0 49
HD15 69
DATA

IC4001
(WM)
131 134 136 - 141 5 7 - 11 105 107
A0 - A17
ADDRESS
D0 99
D15 128
DATA

EUROPE MODEL ONLY

IC3071
(16M SDRAM)
MEMORY ADDRESS 12bit
A0 21
A1 22
A2 23
A3 24
A4 27
A5 28
A6 29
A7 30
A8 31
A9 32
A10 20
A11 19
MEMORY DATA 16bit
DQ0 2
DQ1 3
DQ2 5
DQ3 6
DQ4 8
DQ5 9
DQ6 11
DQ7 12
DQ8 39
DQ9 40
DQ10 42
DQ11 43
DQ12 45
DQ13 46
DQ14 48
DQ15 49
XCS 18
XRAS 17
XCAS 16
XWE 15
CLK 25

IC3061
(16M SDRAM)
MEMORY ADDRESS 12bit
A0 21
A1 22
A2 23
A3 24
A4 27
A5 28
A6 29
A7 30
A8 31
A9 32
A10 20
A11 19
MEMORY DATA 16bit
DQ0 2
DQ1 3
DQ2 5
DQ3 6
DQ4 8
DQ5 9
DQ6 11
DQ7 12
DQ8 39
DQ9 40
DQ10 42
DQ11 43
DQ12 45
DQ13 46
DQ14 48
DQ15 49
XCS 18
XRAS 17
XCAS 16
XWE 15
CLK 25
MA0 2
MA1 4
MA2 7
MA3 10
MA4 8
MA5 6
MA6 3
MA7 207
MA8 204
MA9 201
MA10 206
MA11 203
MEMORY ADDRESS 12bit
MDQ0 159
MDQ1 162
MDQ2 165
MDQ3 168
MDQ4 171
MDQ5 175
MDQ6 178
MDQ7 181
MDQ8 180
MDQ9 177
MDQ10 173
MDQ11 170
MDQ12 167
MDQ13 164
MDQ14 161
MDQ15 158
MEMORY DATA 16bit
XCSM 199
XRAS 196
XCAS 195
XWE 193
MCK 85

IC3001-129
0.68Vp-p(20usec./div.)

IC3001-124
0.64Vp-p(20usec./div.)

IC3001-134
1.2Vp-p(20usec/div)

IC3001-119
0.8Vp-p(20usec/div)

IC3001-147 TO 150,152 TO 155
6.0Vp-p(20usec./div.)

VYOUT 134 Y → A
VBOUT 119 C → B
VGOUT 124 → C
VCOUT 129 → D

VD0 147
VD1 148
VD2 149
VD3 150
VD4 152
VD5 153
VD6 154
VD7 155

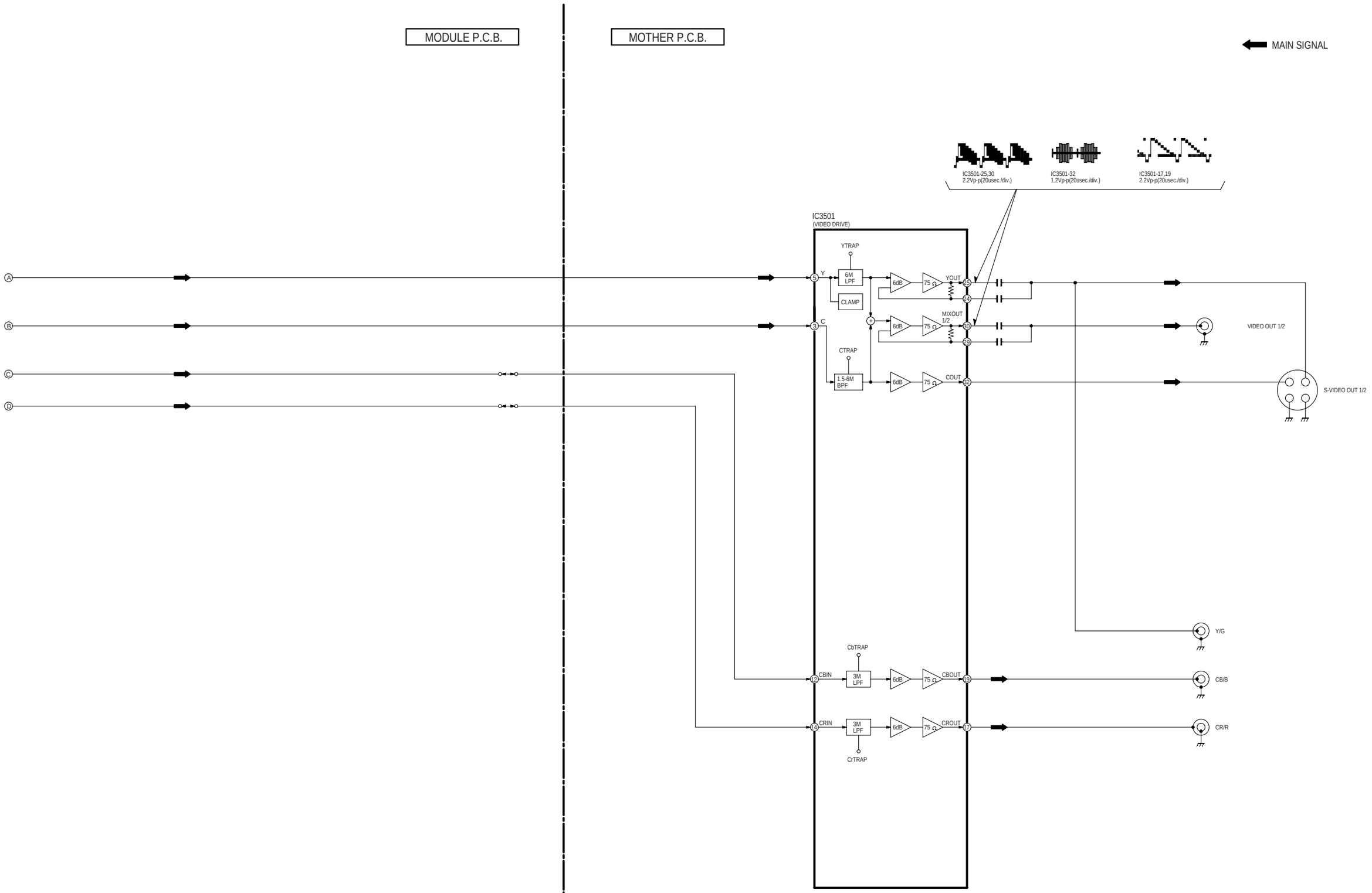
XRST 12 → E

DVD-RV32P/PC
VIDEO BLOCK DIAGRAM

MODULE P.C.B.

MOTHER P.C.B.

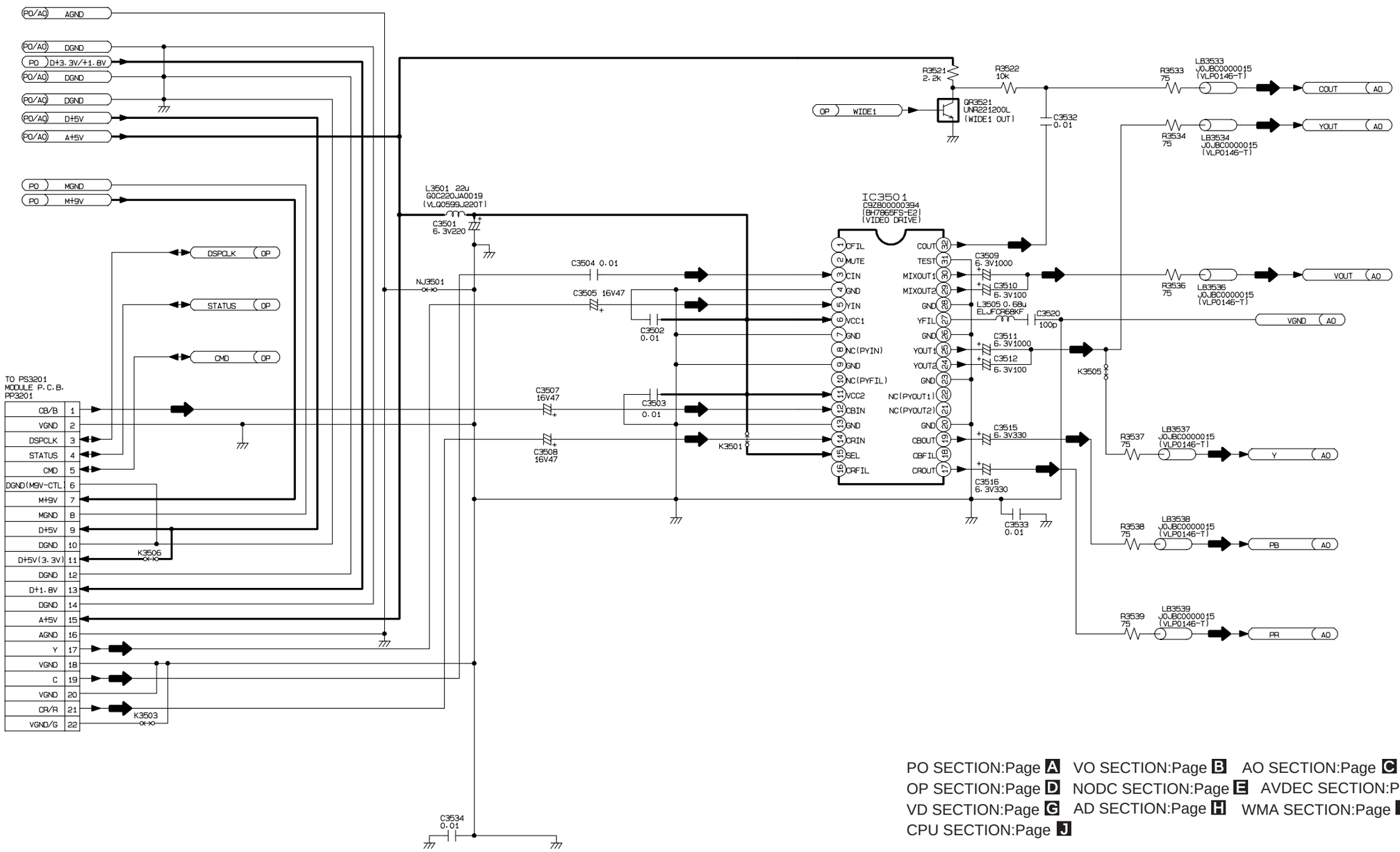
MAIN SIGNAL



DVD-RV32P/PC
VIDEO BLOCK DIAGRAM

DVD-RV32P/PC
VIDEO BLOCK DIAGRAM

VIDEO SIGNAL PATH
AUDIO SIGNAL PATH

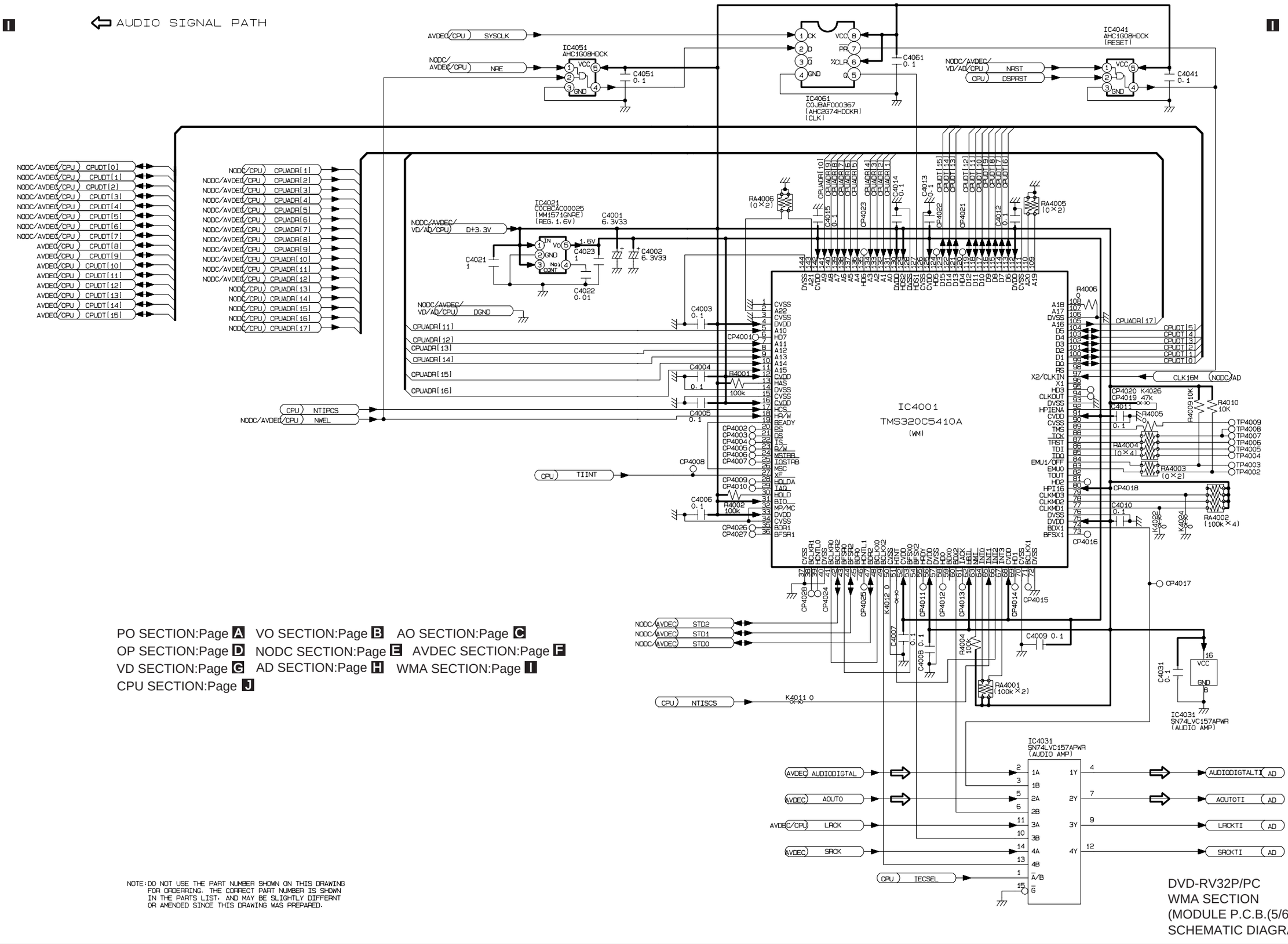


PO SECTION:Page A VO SECTION:Page B AO SECTION:Page C
OP SECTION:Page D NODC SECTION:Page E AVDEC SECTION:Page F
VD SECTION:Page G AD SECTION:Page H WMA SECTION:Page I
CPU SECTION:Page J

NOTE:DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERARING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST. AND MAY BE SLIGHTLY DIFFERNT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

DVD-RV32P/PC
VIDEO-OUT SECTION
(MOTHER P.C.B.(2/4))
SCHEMATIC DIAGRAM

AUDIO SIGNAL PATH



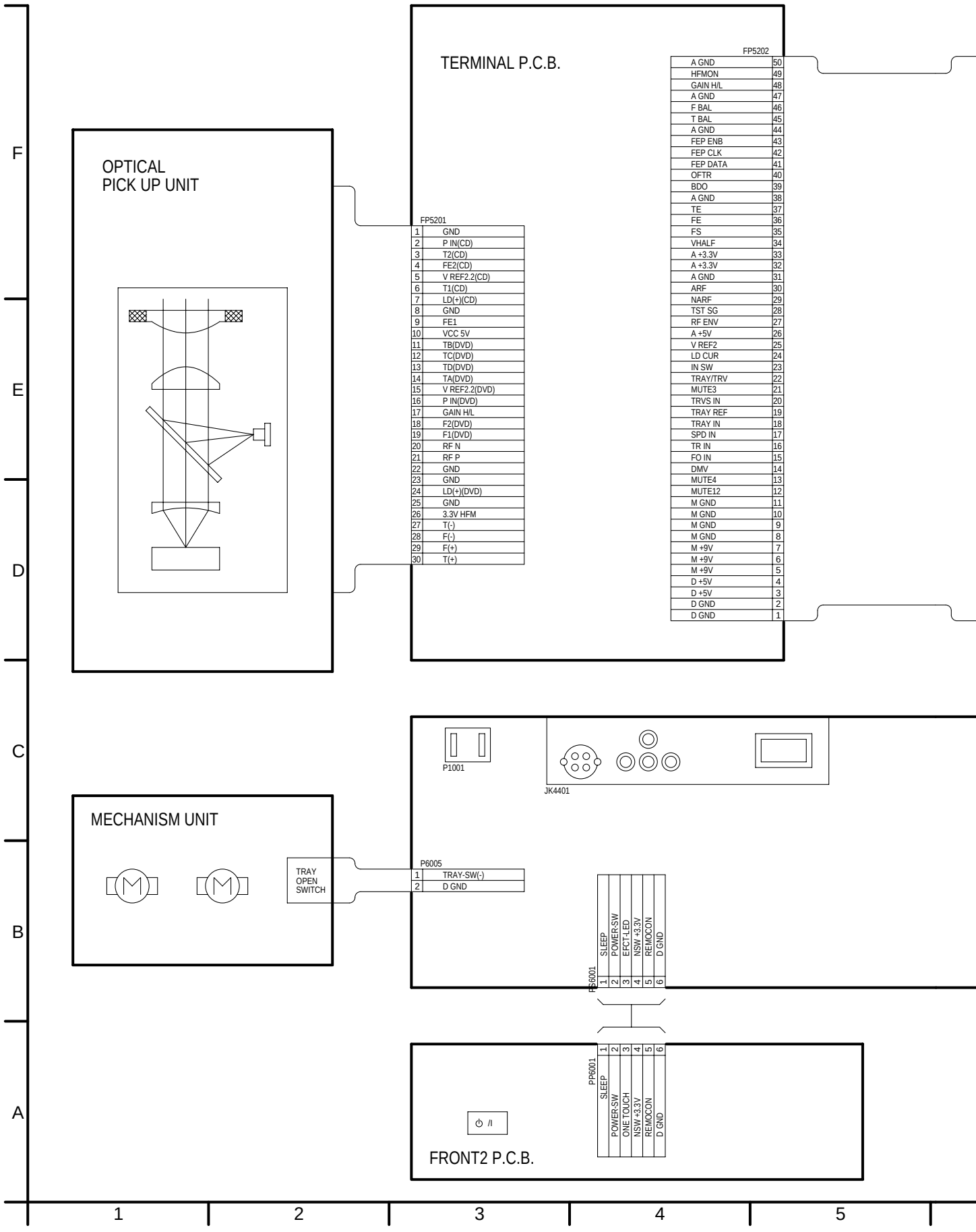
PO SECTION:Page A VO SECTION:Page B AO SECTION:Page C
OP SECTION:Page D NODC SECTION:Page E AVDEC SECTION:Page F
VD SECTION:Page G AD SECTION:Page H WMA SECTION:Page I
CPU SECTION:Page J

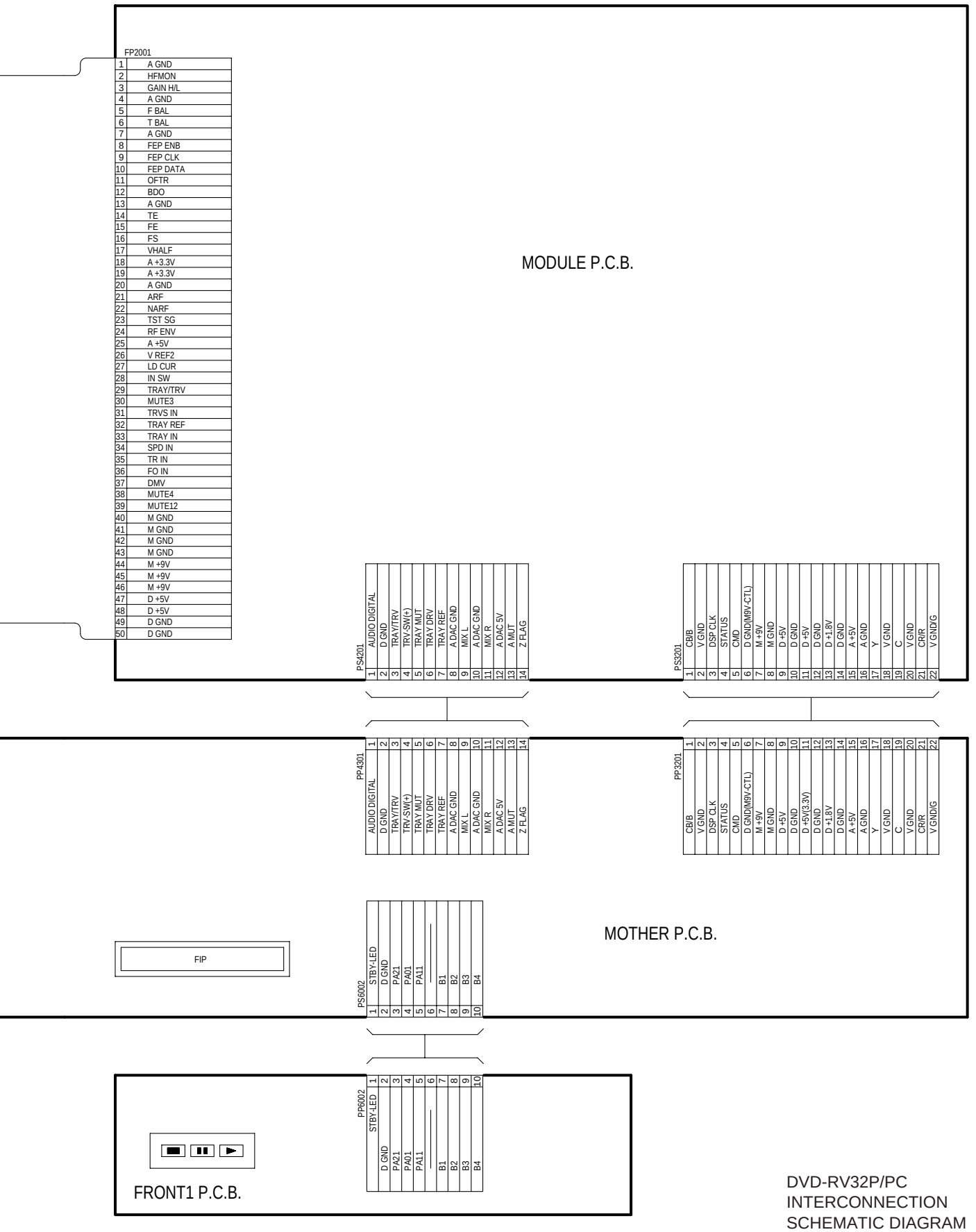
NOTE:DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST. AND MAY BE SLIGHTLY DIFFERNT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

DVD-RV32P/PC
WMA SECTION
(MODULE P.C.B.(5/6))
SCHEMATIC DIAGRAM

15 SCHEMATIC DIAGRAM

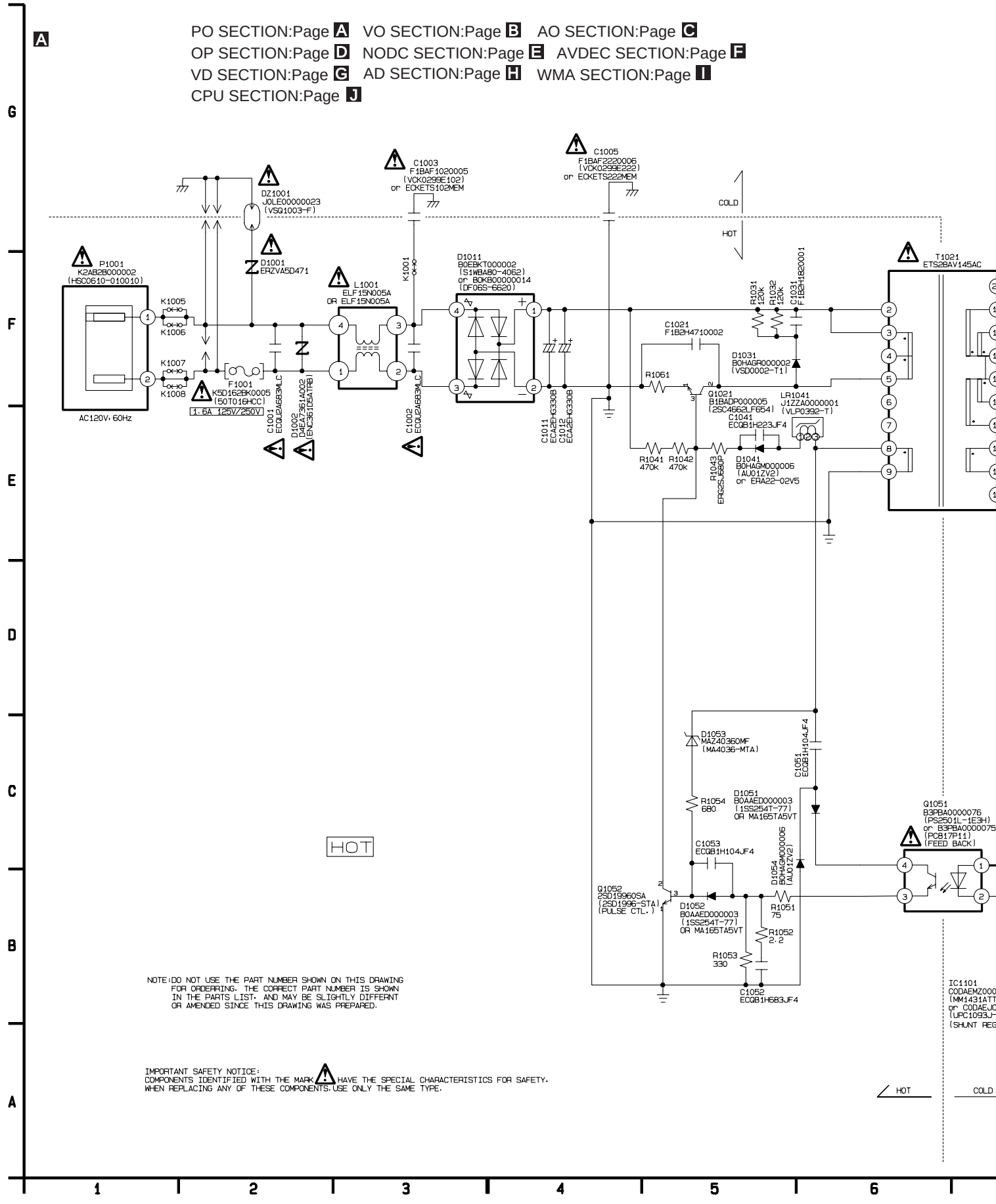
15.1. INTERCONNECTION SCHEMATIC DIAGRAM

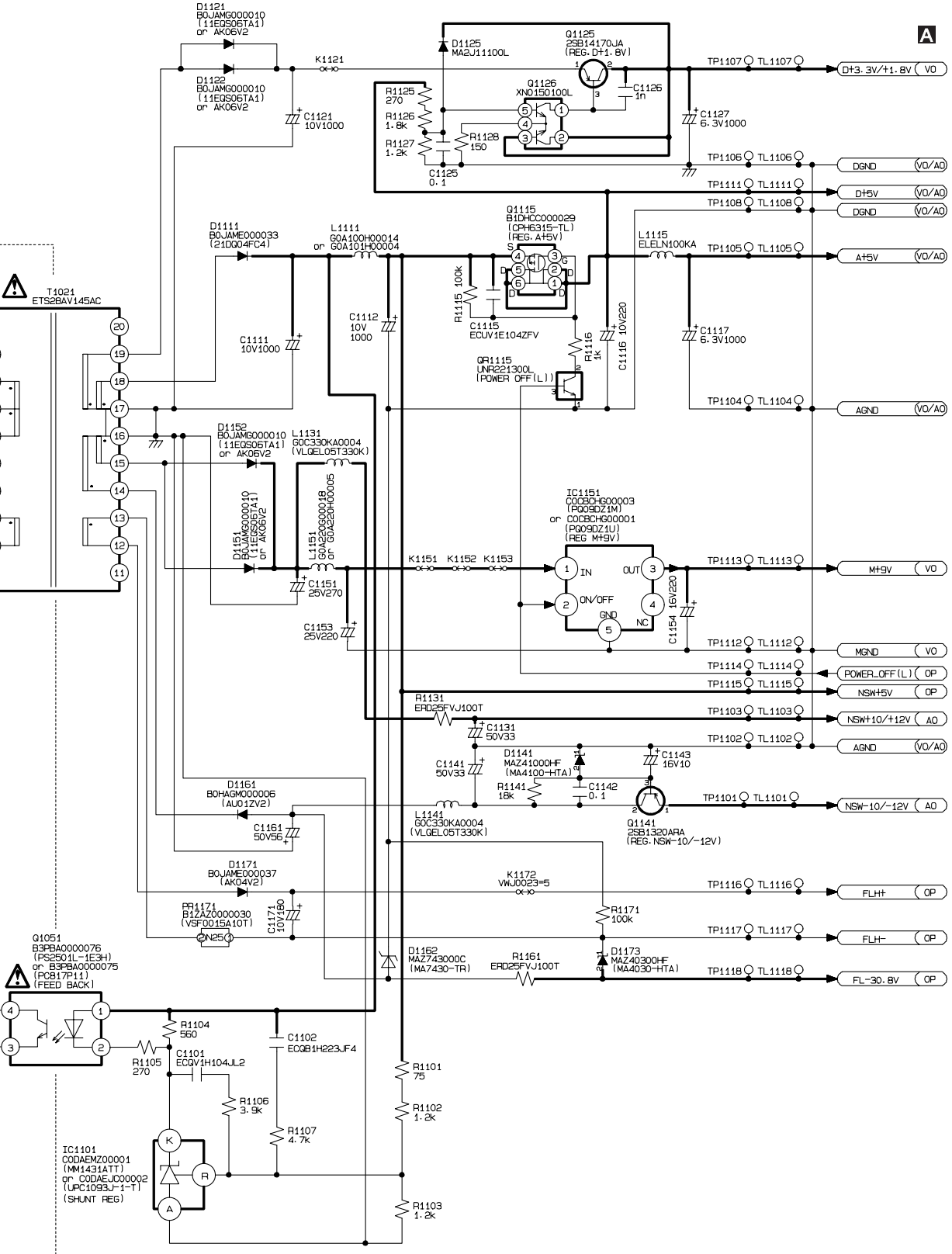




DVD-RV32P/PC
INTERCONNECTION
SCHEMATIC DIAGRAM

15.2. POWER SECTION (MOTHER P.C.B. (1/4)) SCHEMATIC DIAGRAM

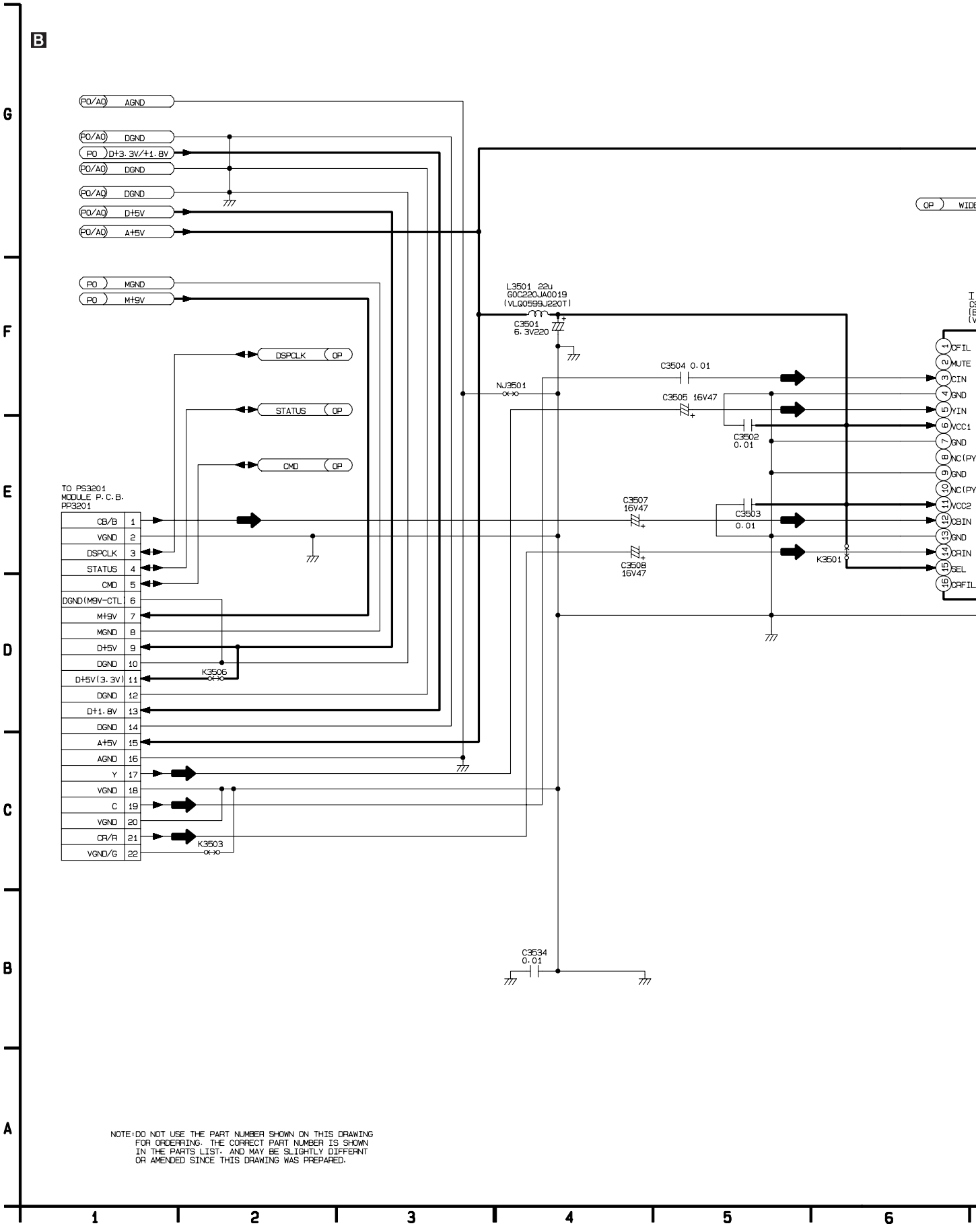




DVD-RV32P/PC
POWER SECTION
(MOTHER P.C.B.(1/4))
SCHEMATIC DIAGRAM

7 8 9 10 11

15.3. VIDEO-OUT SECTION (MOTHER P.C.B. (2/4)) SCHEMATIC DIAGRAM

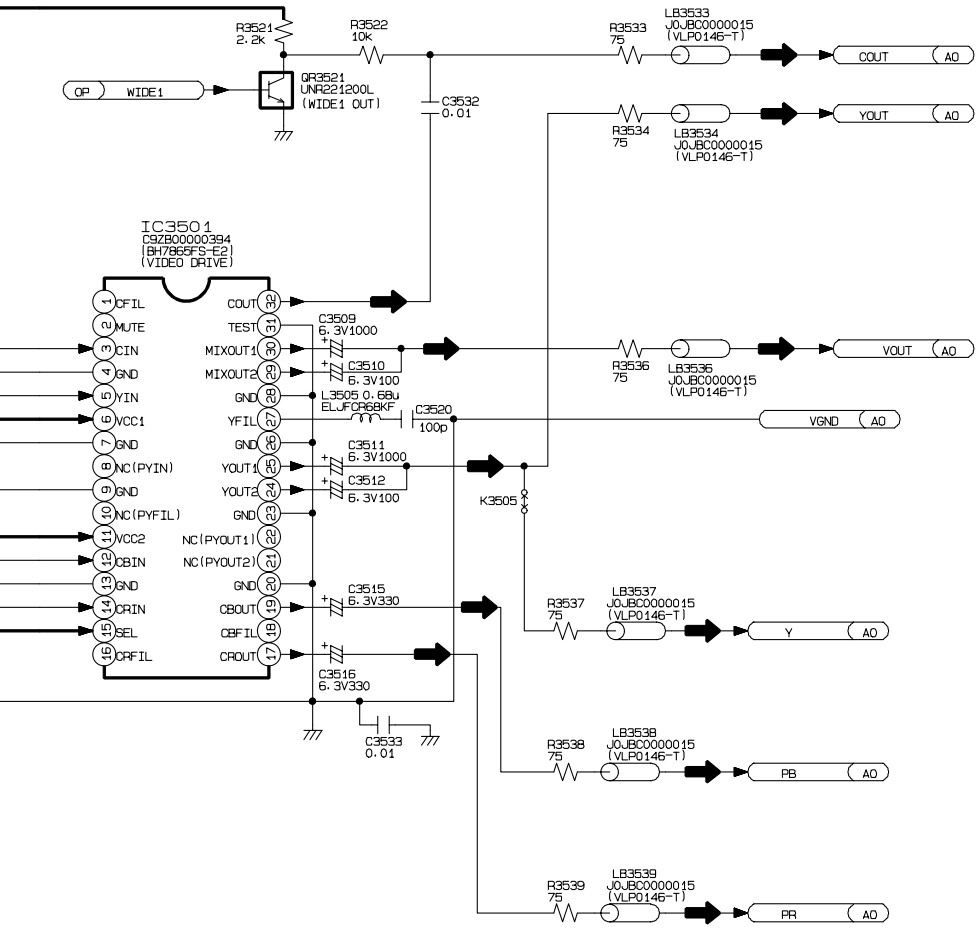


NOTE:DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERRING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST. AND MAY BE SLIGHTLY DIFFERNT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

M

VIDEO SIGNAL PATH
AUDIO SIGNAL PATH

B



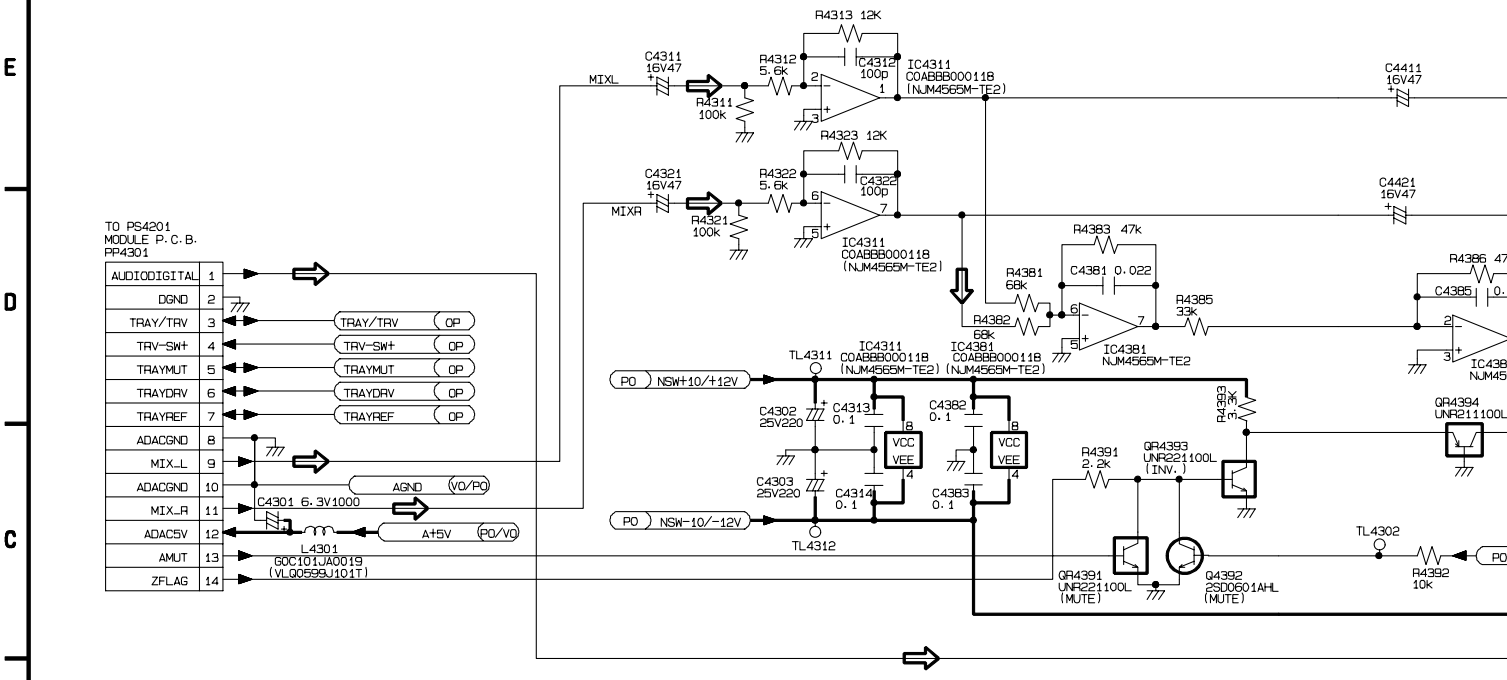
PO SECTION:Page A VO SECTION:Page B AO SECTION:Page C
OP SECTION:Page D NODC SECTION:Page E AVDEC SECTION:Page F
VD SECTION:Page G AD SECTION:Page H WMA SECTION:Page I
CPU SECTION:Page J

DVD-RV32P/PC
VIDEO-OUT SECTION
(MOTHER P.C.B.(2/4))
SCHEMATIC DIAGRAM

6 7 8 9 10 11

15.4. AUDIO-OUT SECTION (MOTHER P.C.B. (3/4)) SCHEMATIC DIAGRAM

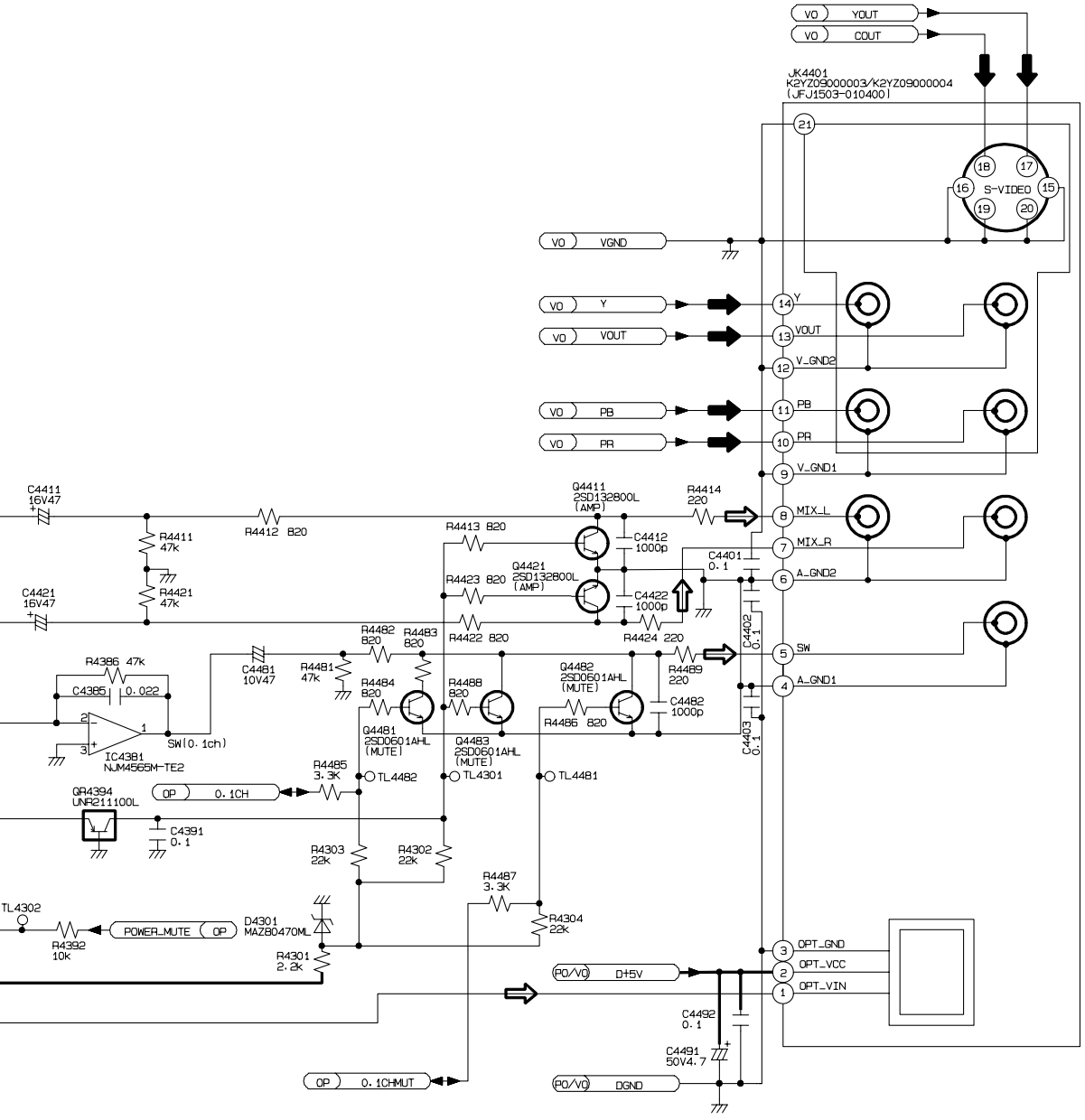
PO SECTION:Page A VO SECTION:Page B AO SECTION:Page C
OP SECTION:Page D NODC SECTION:Page E AVDEC SECTION:Page F
VD SECTION:Page G AD SECTION:Page H WMA SECTION:Page I
CPU SECTION:Page J



VIDEO SIGNAL PATH

AUDIO SIGNAL PATH

C



C4405 0.1

C4406 0.1

C4407 0.1

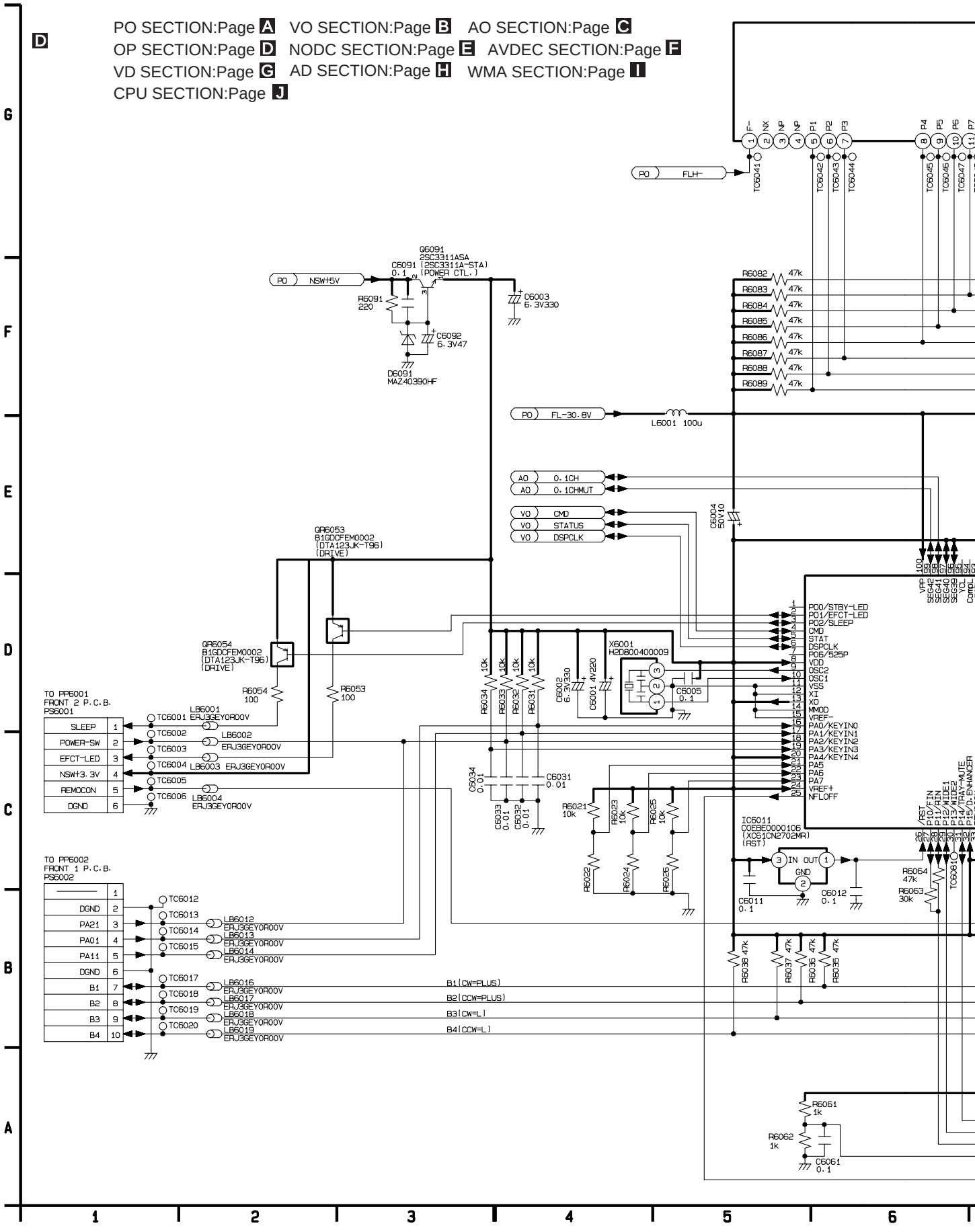
C4404 0.1

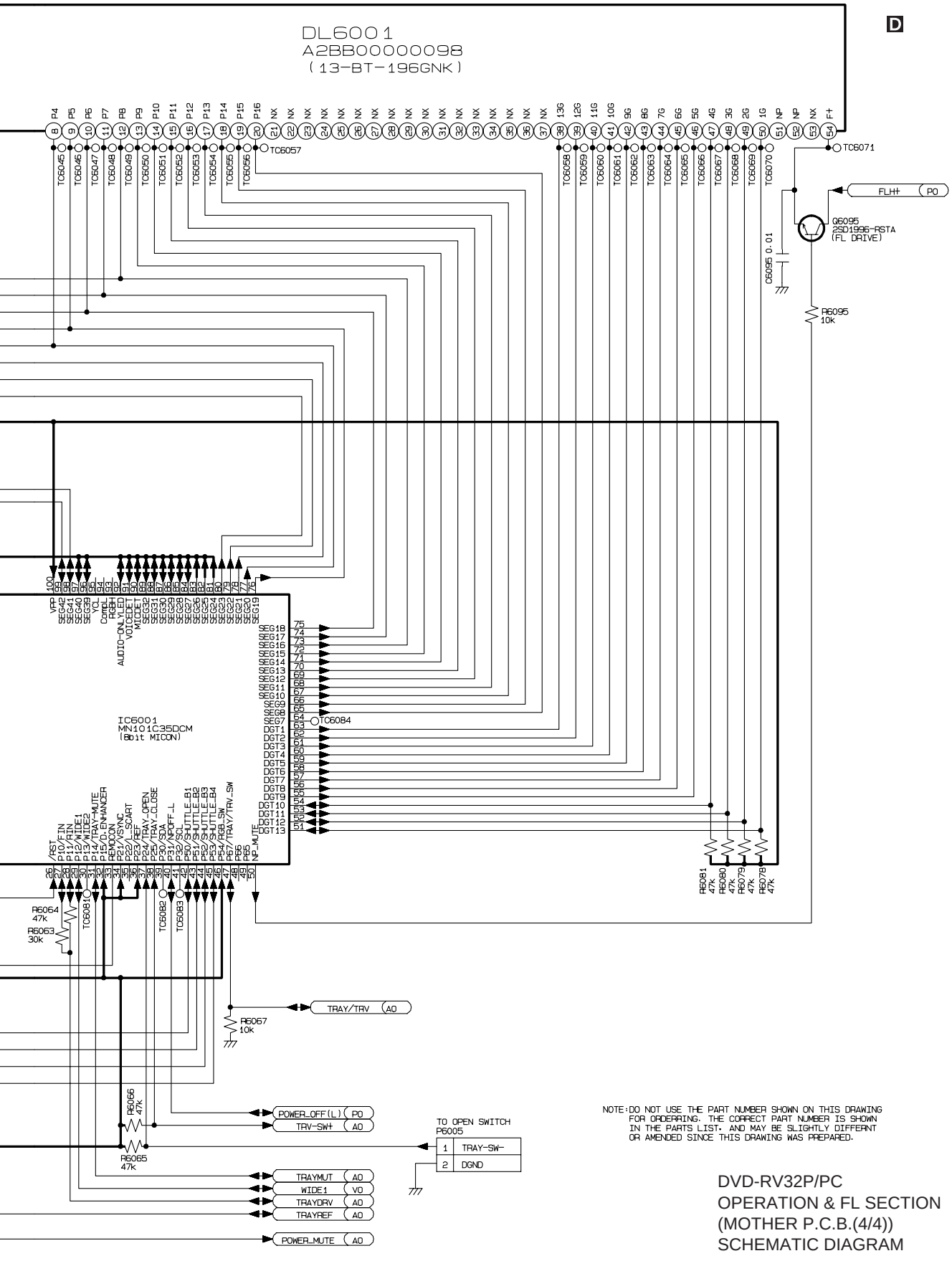
NOTE:DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERARING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST. AND MAY BE SLIGHTLY DIFFERNT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

DVD-RV32P/PC
AUDIO-OUT SECTION
(MOTHER P.C.B.(3/4))
SCHEMATIC DIAGRAM

7 8 9 10 11

15.5. OPERATION & FL SECTION (MOTHER P.C.B. (4/4)) SCHEMATIC DIAGRAM

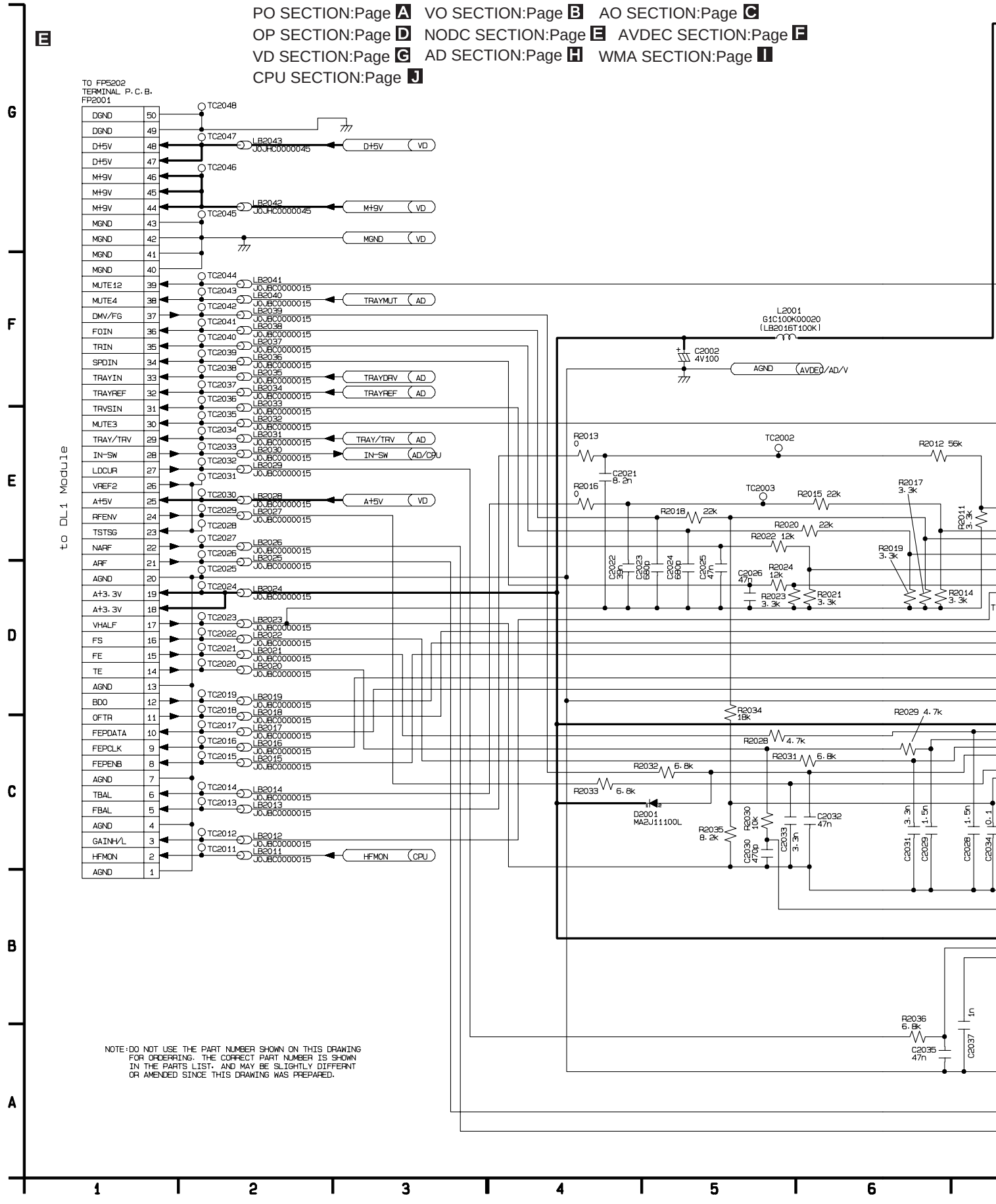


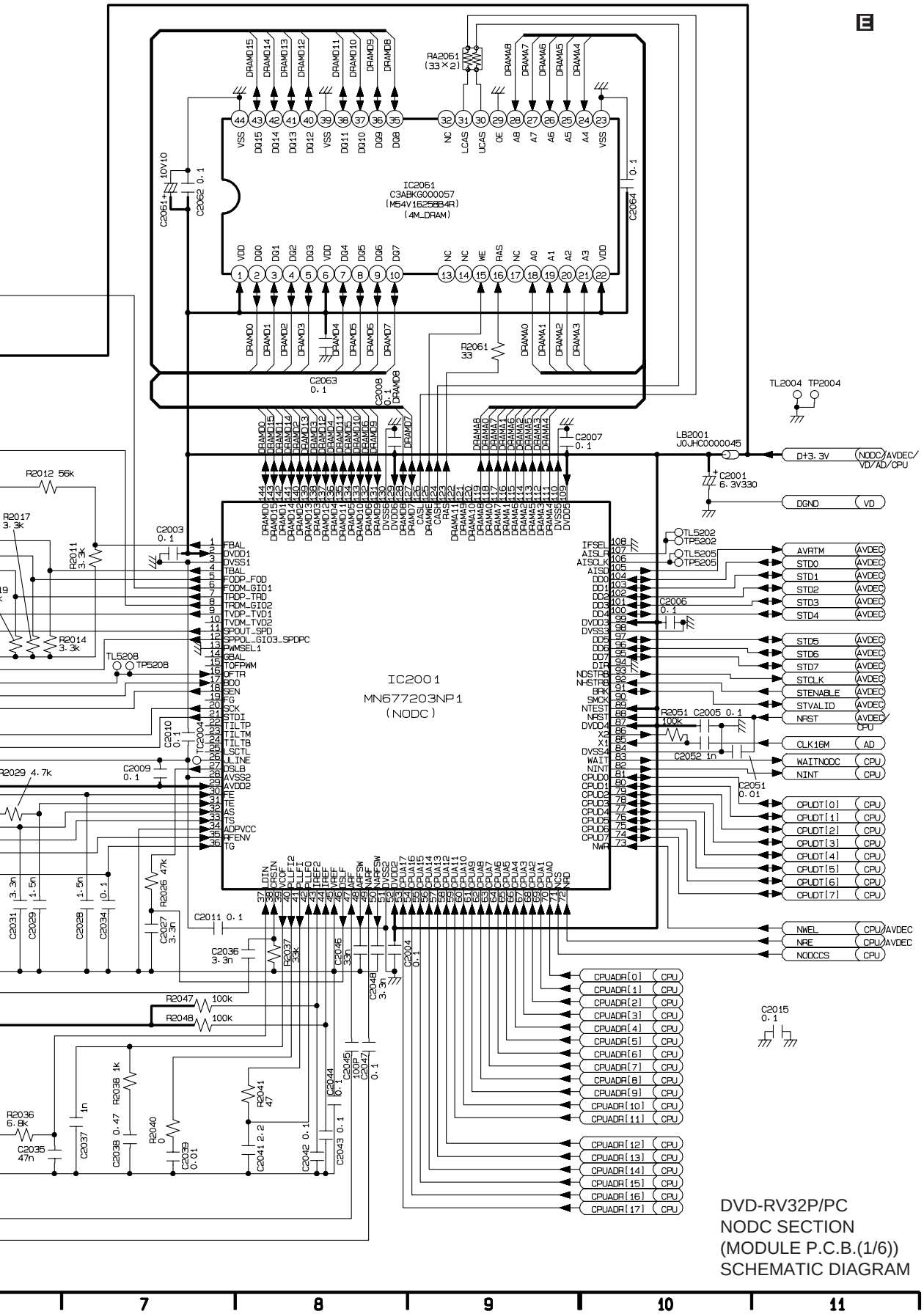


DVD-RV32P/PC
OPERATION & FL SECTION
(MOTHER P.C.B.(4/4))
SCHEMATIC DIAGRAM

6 7 8 9 10 11

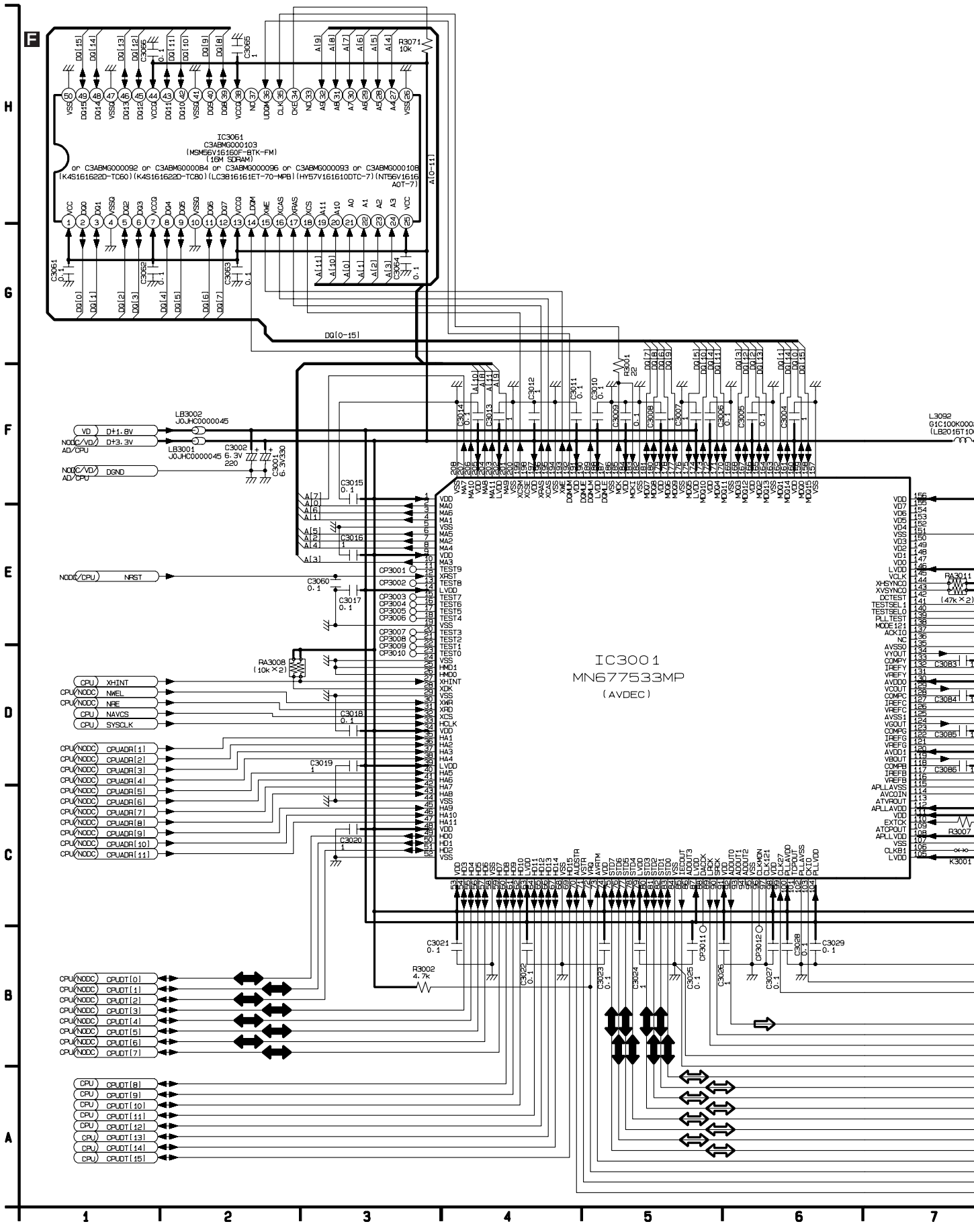
15.6. NODC SECTION (MODULE P.C.B. (1/6)) SCHEMATIC DIAGRAM


PO SECTION:Page A VO SECTION:Page B AO SECTION:Page C
OP SECTION:Page D NODC SECTION:Page E AVDEC SECTION:Page F
VD SECTION:Page G AD SECTION:Page H WMA SECTION:Page I
CPU SECTION:Page J
TO FP5202
TERMINAL P.C.B.
FP2001
to DL1 Module
NOTE:DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERRING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST. AND MAY BE SLIGHTLY DIFFERANT OR AMENDED SINCE THIS DRAWING WAS PREPARED.



DVD-RV32P/PC
NODC SECTION
(MODULE P.C.B.(1/6))
SCHEMATIC DIAGRAM

15.7. AVDEC SECTION (MODULE P.C.B. (2/6)) SCHEMATIC DIAGRAM

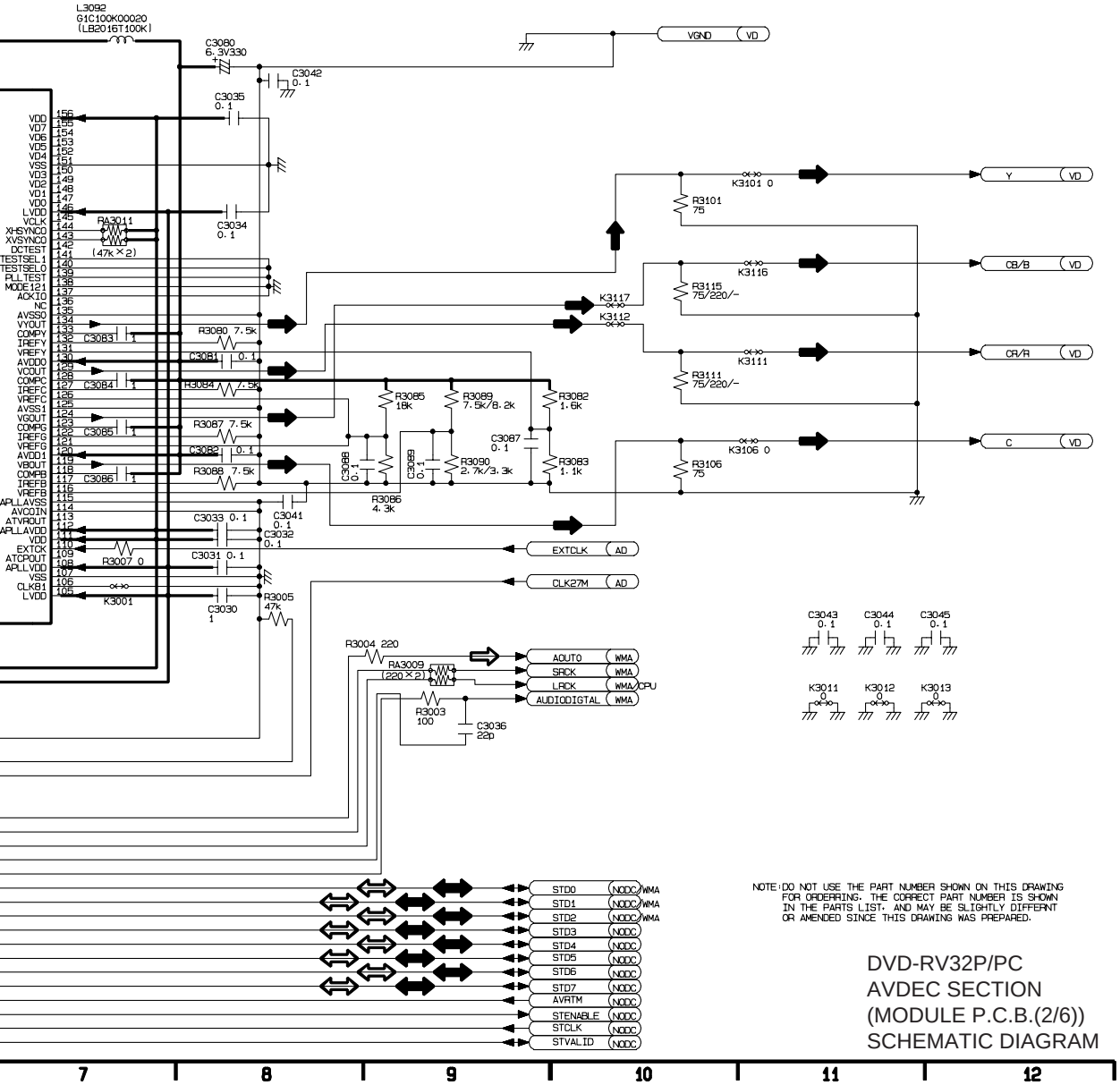


F

VIDEO SIGNAL PATH

AUDIO SIGNAL PATH

PO SECTION:Page A VO SECTION:Page B AO SECTION:Page C
OP SECTION:Page D NODC SECTION:Page E AVDEC SECTION:Page F
VD SECTION:Page G AD SECTION:Page H WMA SECTION:Page I
CPU SECTION:Page J

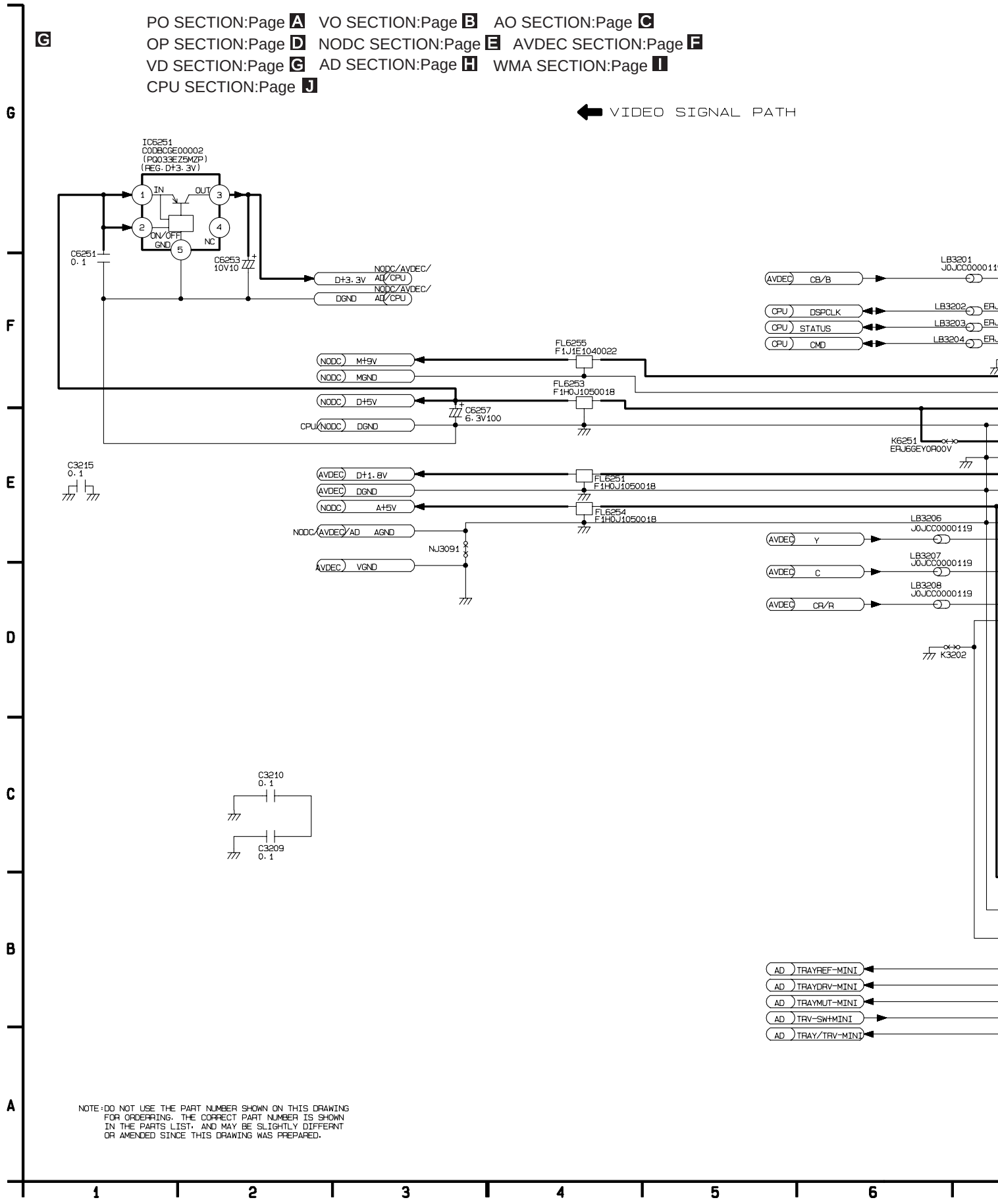


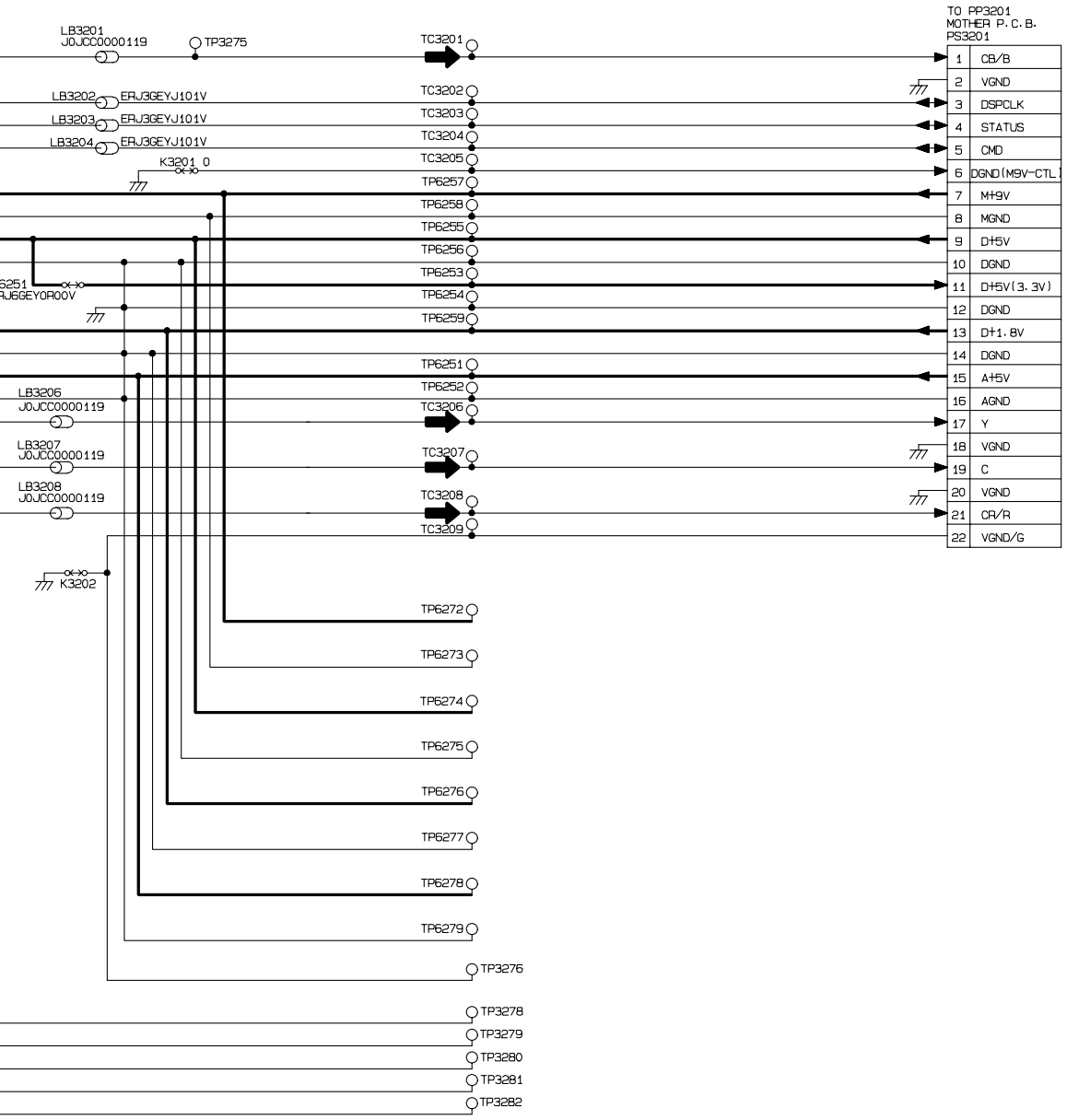
NOTE:DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERRING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST. AND MAY BE SLIGHTLY DIFFERNT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

DVD-RV32P/PC
AVDEC SECTION
(MODULE P.C.B.(2/6))
SCHEMATIC DIAGRAM

7 8 9 10 11 12

15.8. VIDEO-DAC SECTION (MODULE P.C.B. (3/6)) SCHEMATIC DIAGRAM

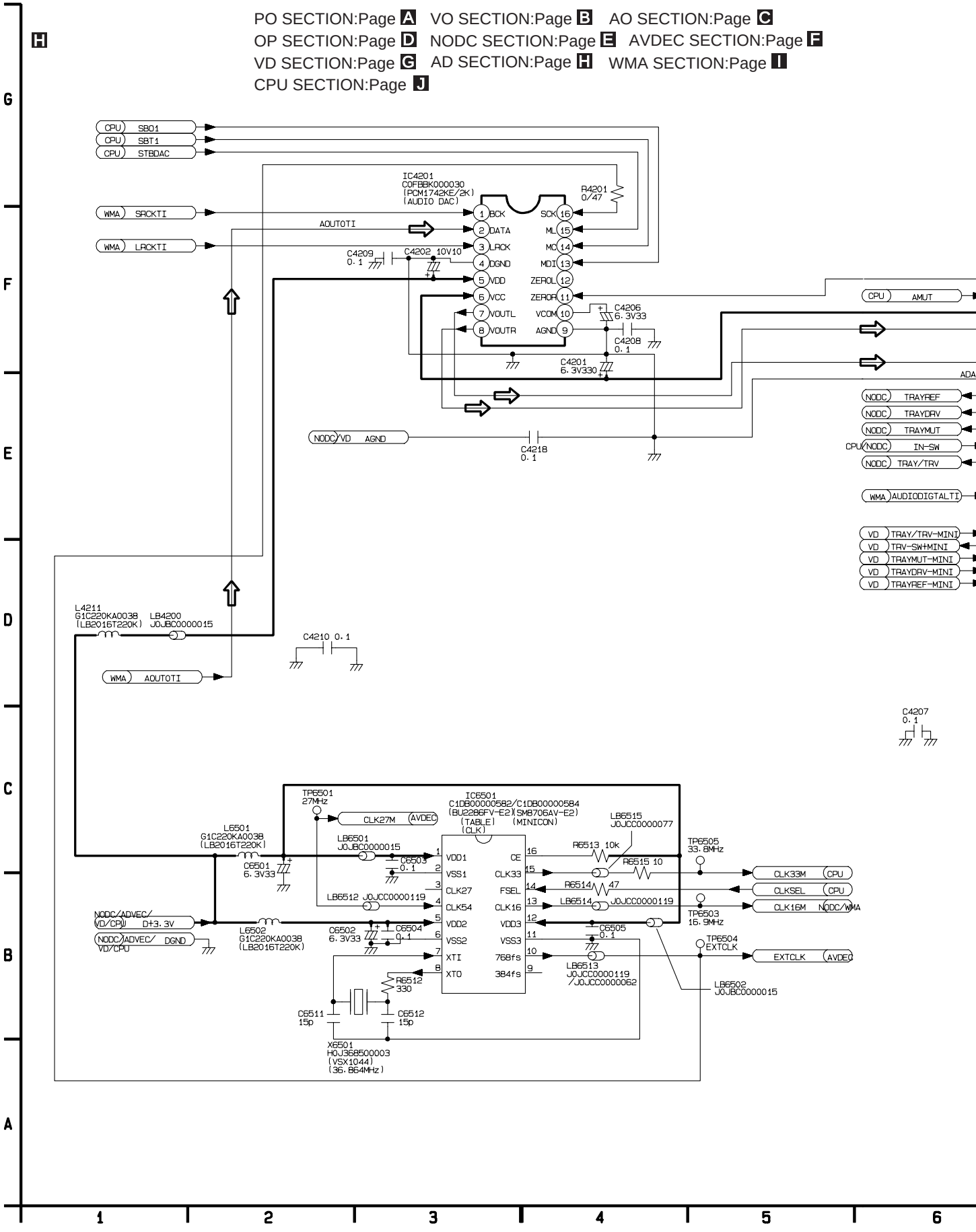




DVD-RV32P/PC
VIDEO-DAC SECTION
(MODULE P.C.B.(3/6))
SCHEMATIC DIAGRAM

7 8 9 10 11

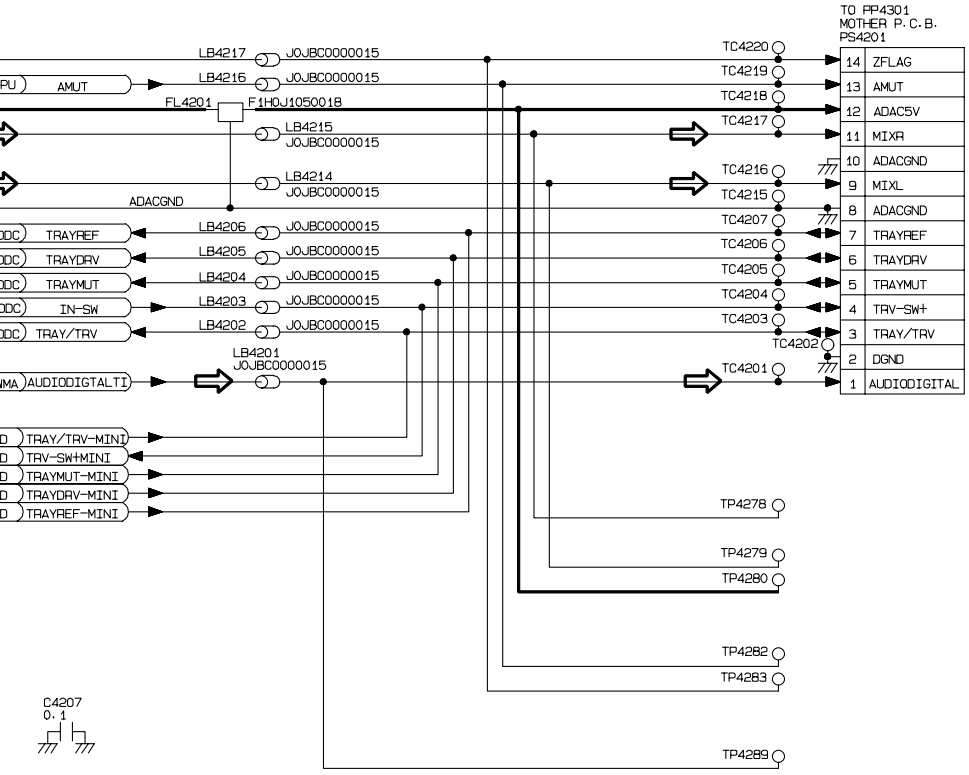
15.9. AUDIO-DAC SECTION (MODULE P.C.B. (4/6)) SCHEMATIC DIAGRAM



M

AUDIO SIGNAL PATH

H

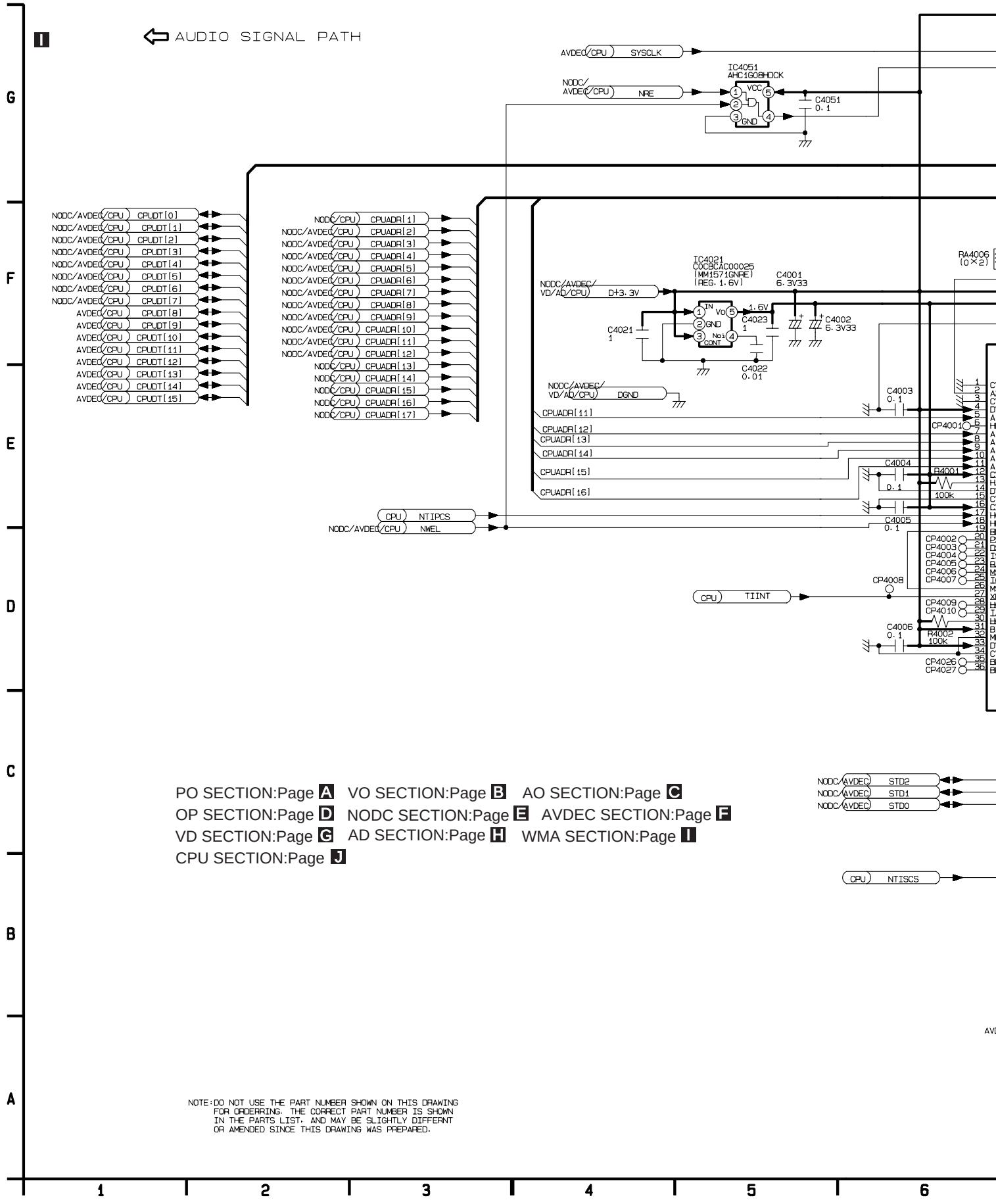


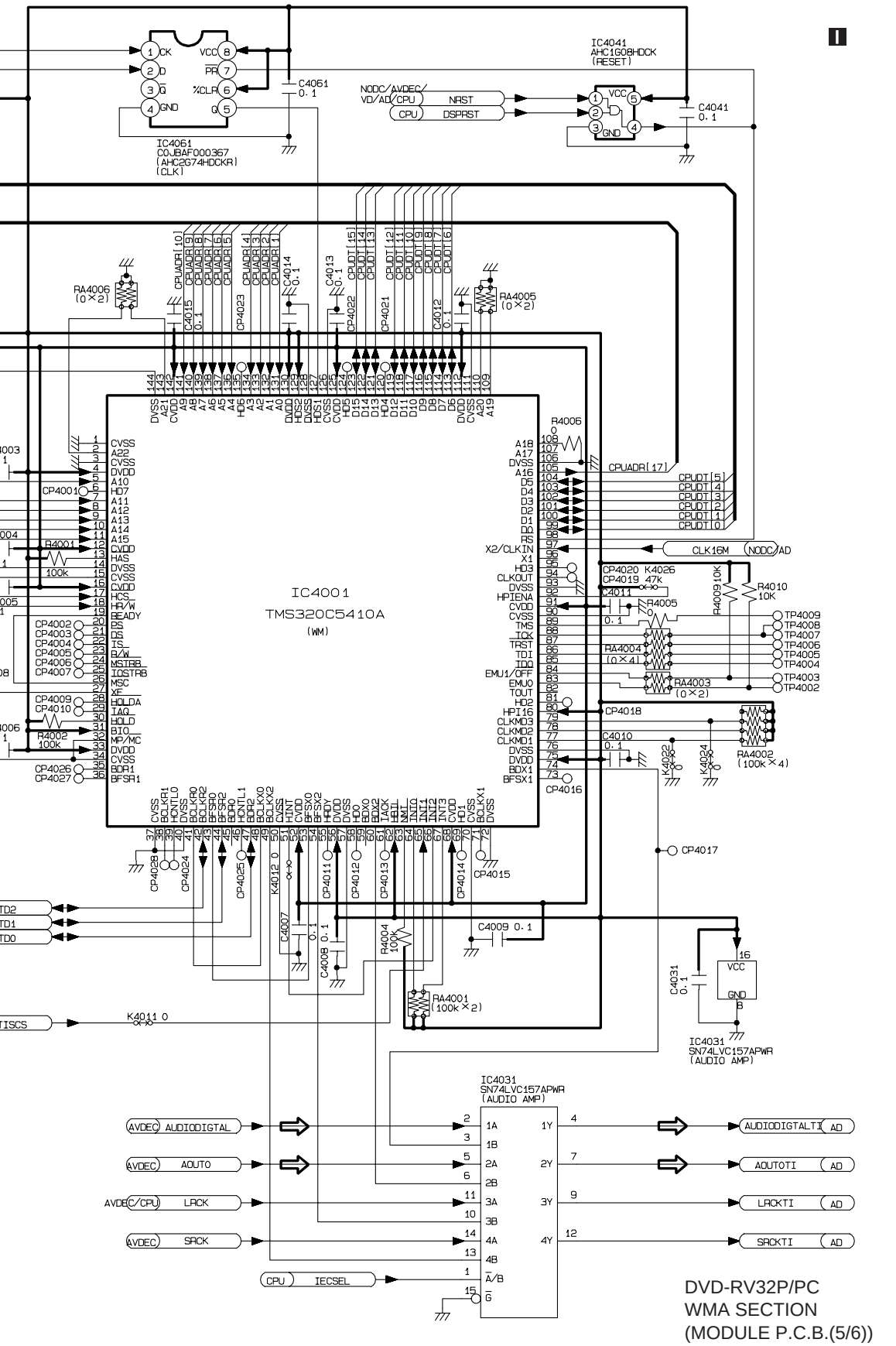
NOTE:DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERRING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST. AND MAY BE SLIGHTLY DIFFERNT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

DVD-RV32P/PC
AUDIO-DAC SECTION
(MODULE P.C.B.(4/6))
SCHEMATIC DIAGRAM

6 7 8 9 10

15.10. WMA SECTION (MODULE P.C.B. (5/6)) SCHEMATIC DIAGRAM



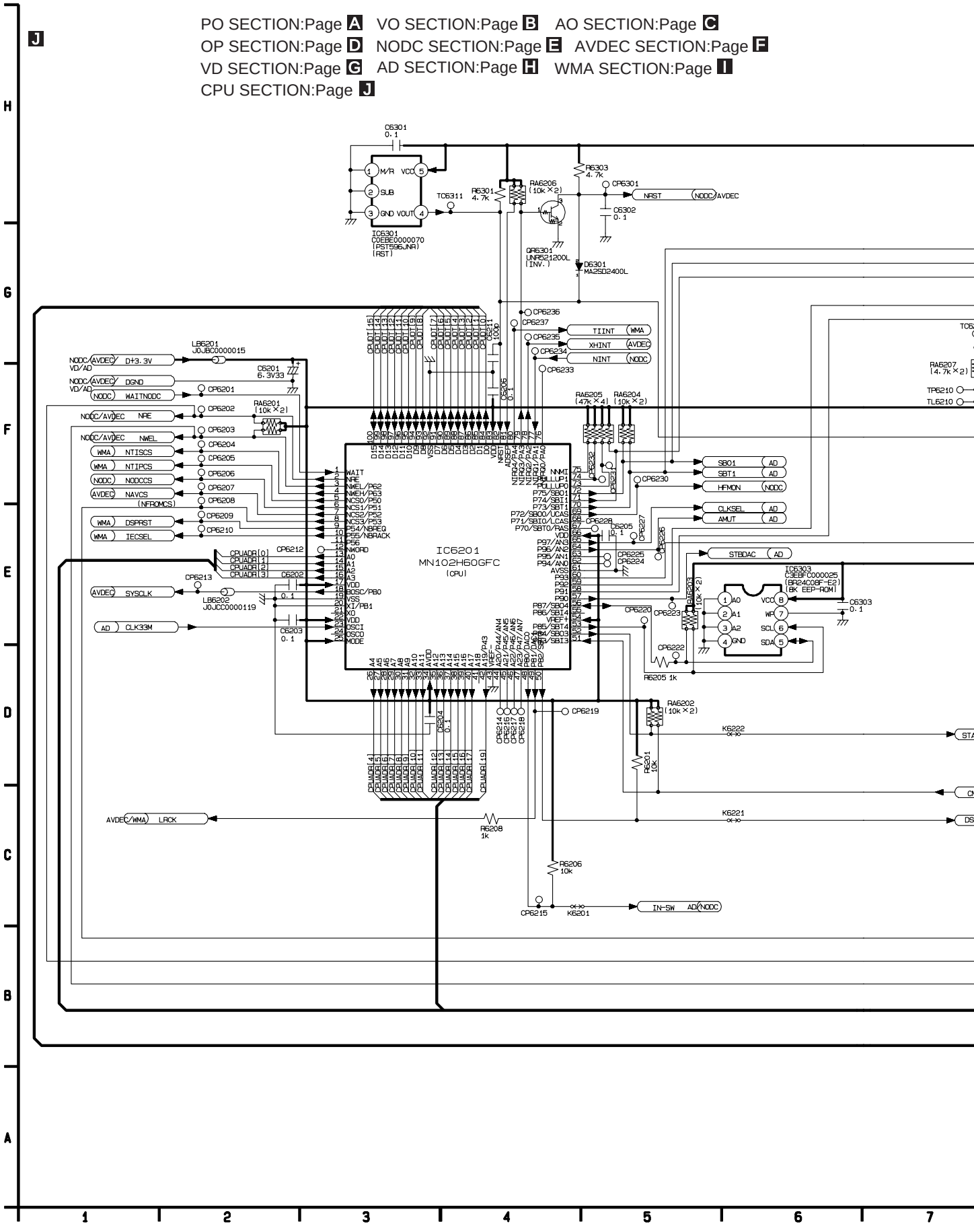


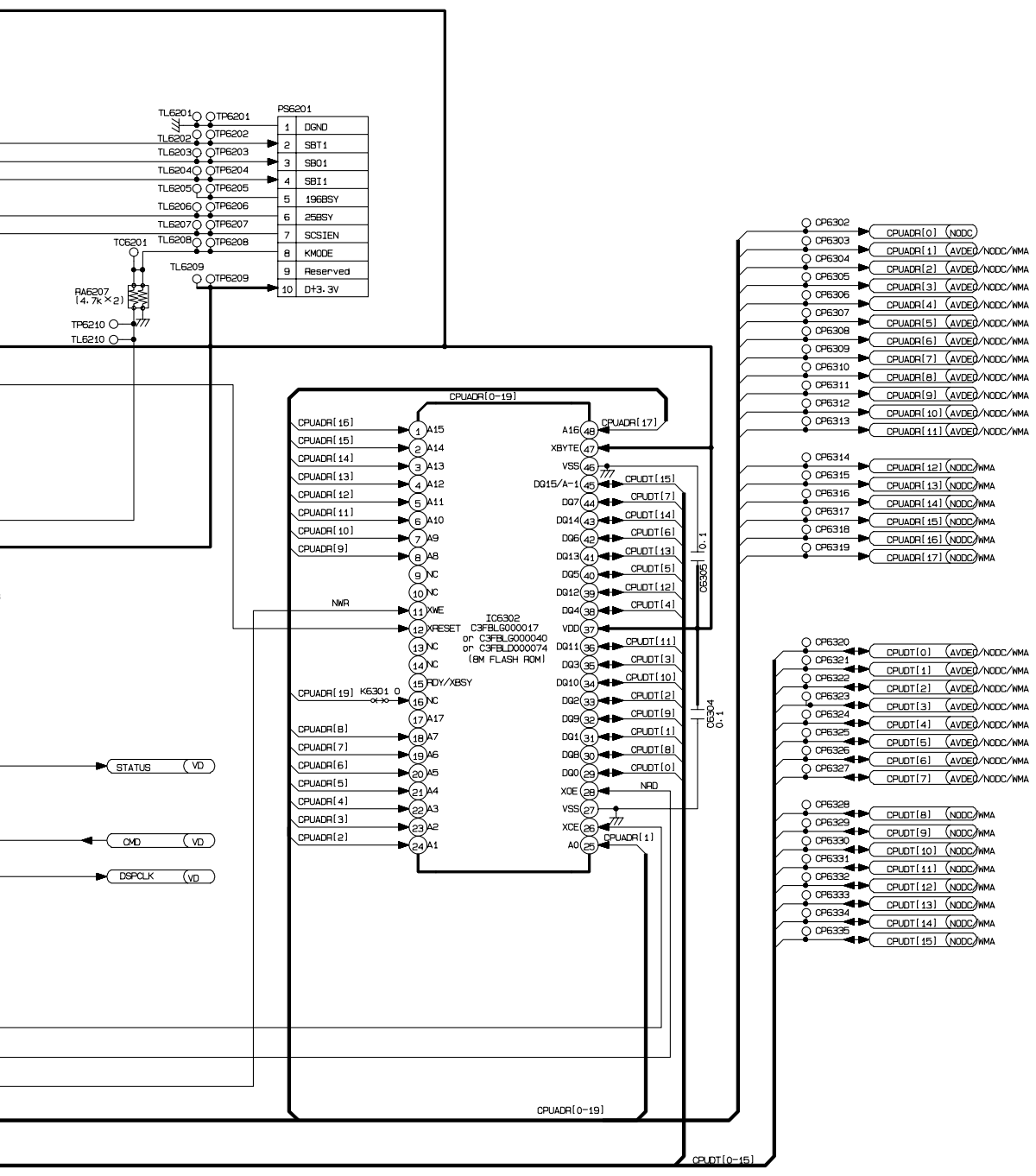
DVD-RV32P/PC
WMA SECTION
(MODULE P.C.B.(5/6))
SCHEMATIC DIAGRAM

6 7 8 9 10

15.11. CPU SECTION (MODULE P.C.B. (6/6)) SCHEMATIC DIAGRAM

PO SECTION:Page A VO SECTION:Page B AO SECTION:Page C
OP SECTION:Page D NODC SECTION:Page E AVDEC SECTION:Page F
VD SECTION:Page G AD SECTION:Page H WMA SECTION:Page I
CPU SECTION:Page J



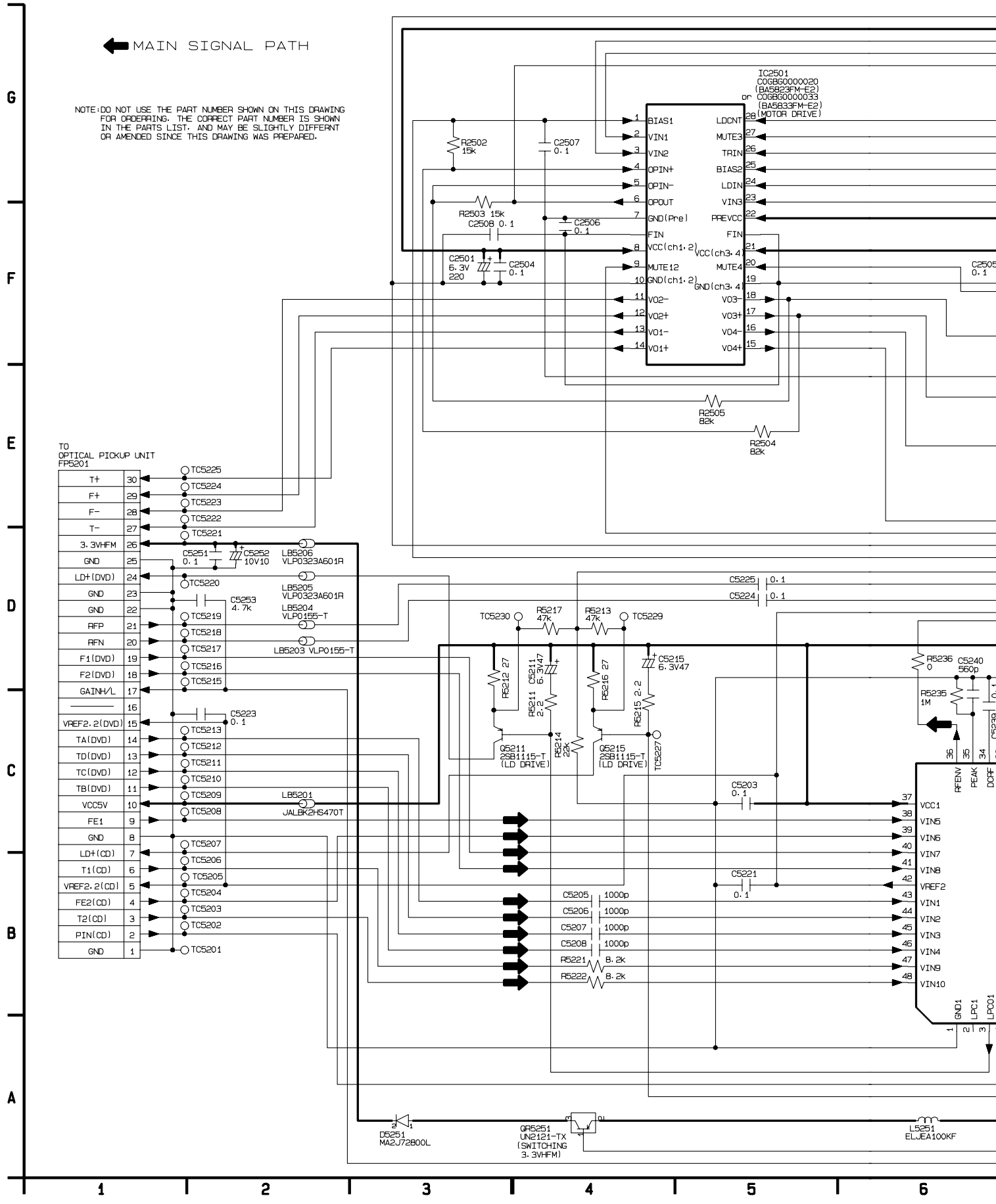


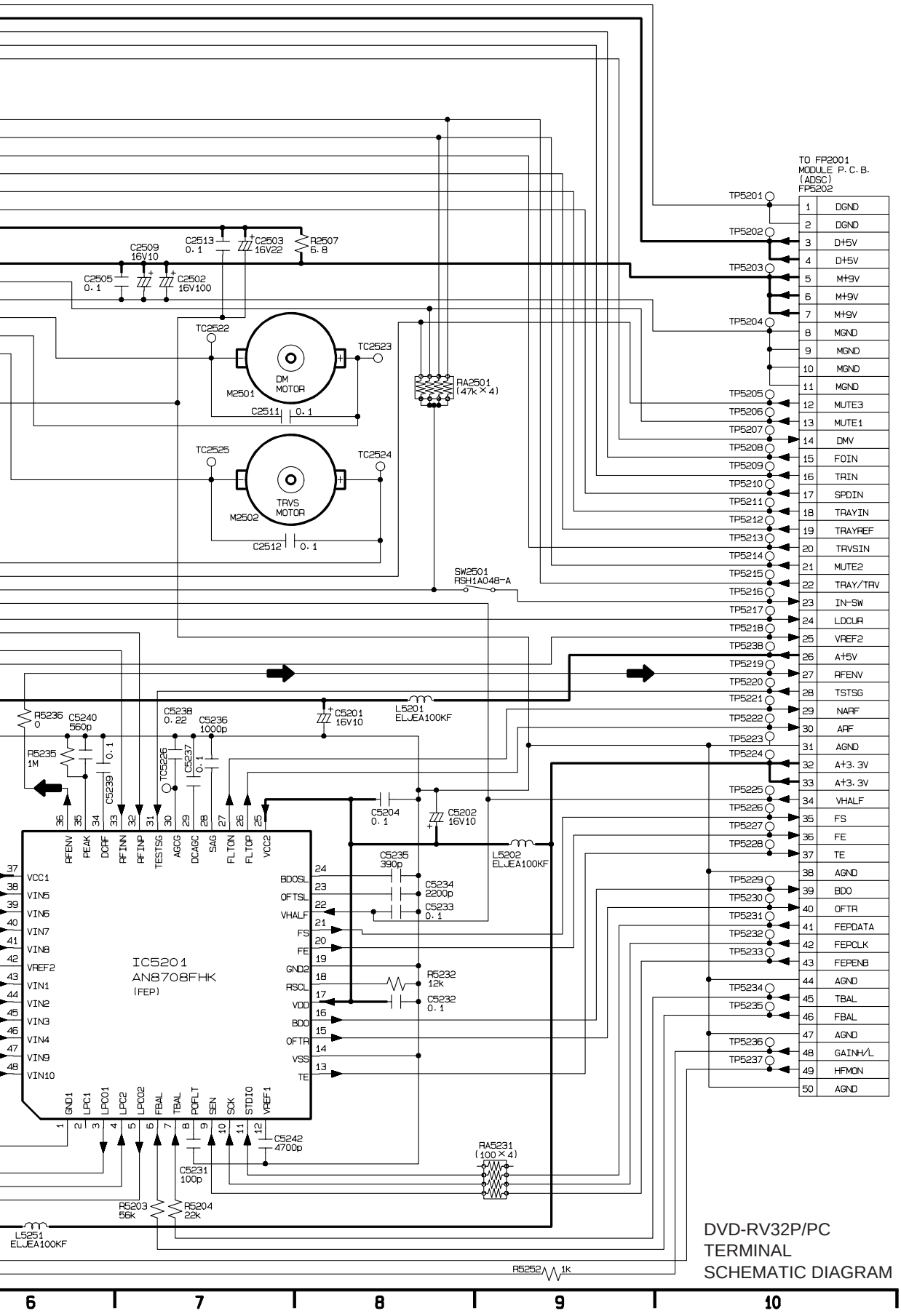
NOTE:DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERRING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST, AND MAY BE SLIGHTLY DIFFERNT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

DVD-RV32P/PC
CPU SECTION
(MODULE P.C.B.(6/6))
SCHEMATIC DIAGRAM

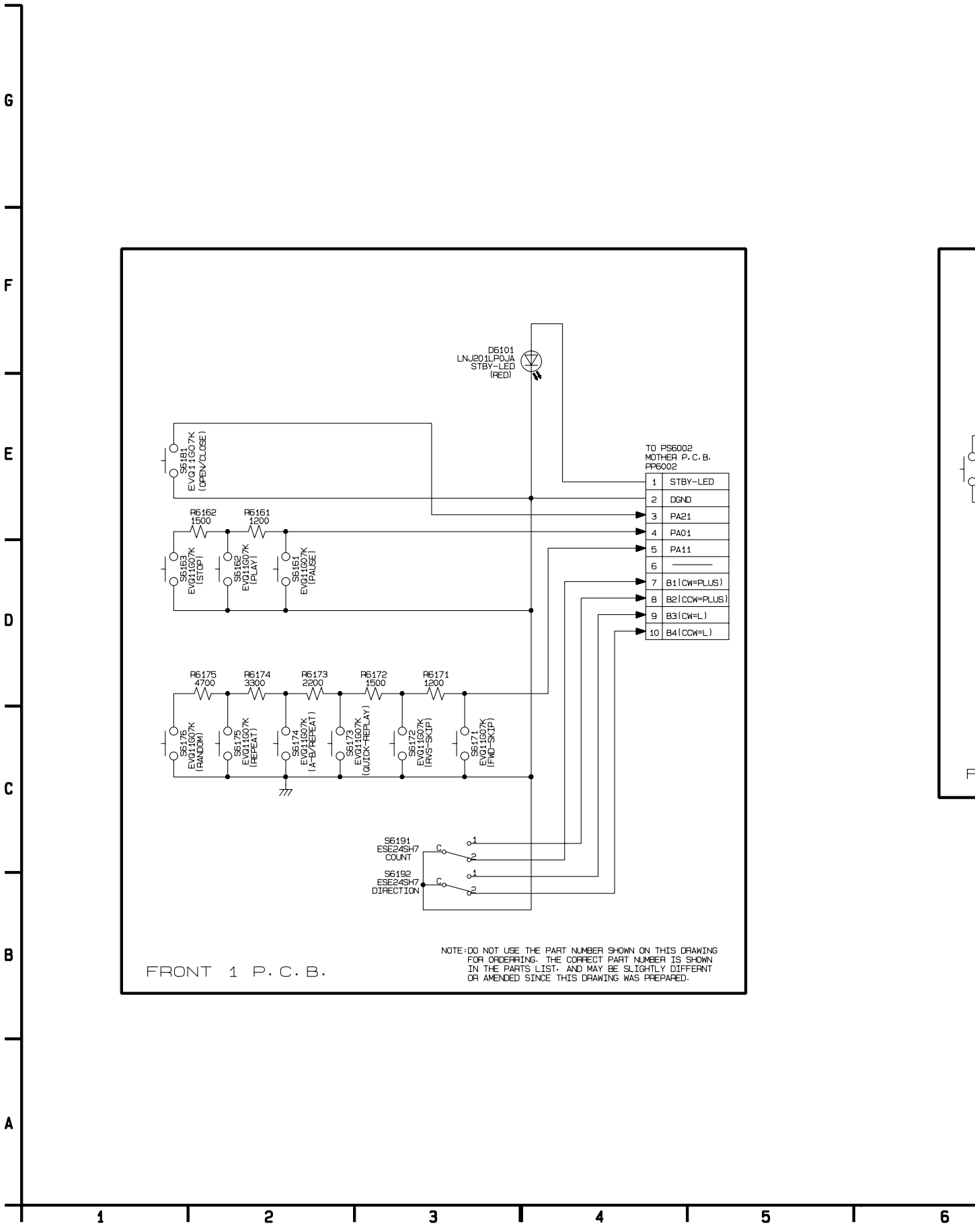
7 8 9 10 11 12

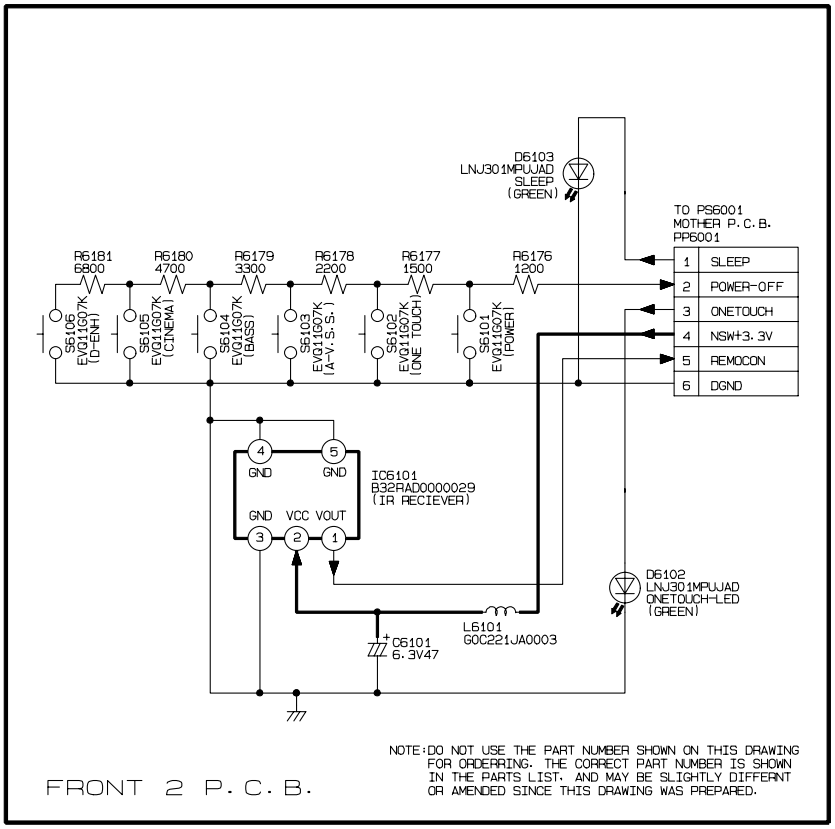
15.12. TERMINAL SCHEMATIC DIAGRAM




TO FP2001
MODULE P.C.B.
(ADSC)
FP5202
1 DGND
2 DGND
3 D+5V
4 D+5V
5 M+9V
6 M+9V
7 M+9V
8 MGND
9 MGND
10 MGND
11 MGND
12 MUTE3
13 MUTE1
14 DMV
15 FOIN
16 TRIN
17 SPDIN
18 TRAYIN
19 TRAYREF
20 TRVSIN
21 MUTE2
22 TRAY/TRV
23 IN-SW
24 LDCUR
25 VREF2
26 A+5V
27 RFENV
28 TSTSG
29 NARF
30 ARF
31 AGND
32 A+3.3V
33 A+3.3V
34 VHALF
35 FS
36 FE
37 TE
38 AGND
39 BDO
40 OFTR
41 FEPDATA
42 FEPCLK
43 FEPENB
44 AGND
45 TBAL
46 FBAL
47 AGND
48 GAINH/L
49 HFMON
50 AGND
IC5201
AN8708FHK
(FEP)
C2509 16V10
C2513 0.1
C2503 16V22
R2507 6.8
C2505 0.1
C2502 16V100
TC2522
TC2523
DM MOTOR
M2501
C2511 0.1
RA2501 (47k×4)
TC2525
TC2524
TRVS MOTOR
M2502
C2512 0.1
SW2501 RSH1A048-A
R5236 0
C5240 560p
R5235 1M
C5239 0.1
C5238 0.22
C5236 1000p
C5201 16V10
L5201 ELJEA100KF
TC5226
C5237 0.1
C5204 0.1
C5202 16V10
L5202 ELJEA100KF
C5235 390p
C5234 2200p
C5233 0.1
R5232 12k
C5232 0.1
C5242 4700p
C5231 100p
RA5231 (100×4)
R5203 56k
R5204 22k
L5251 ELJEA100KF
R5252 1k
DVD-RV32P/PC
TERMINAL
SCHEMATIC DIAGRAM
6
7
8
9
10

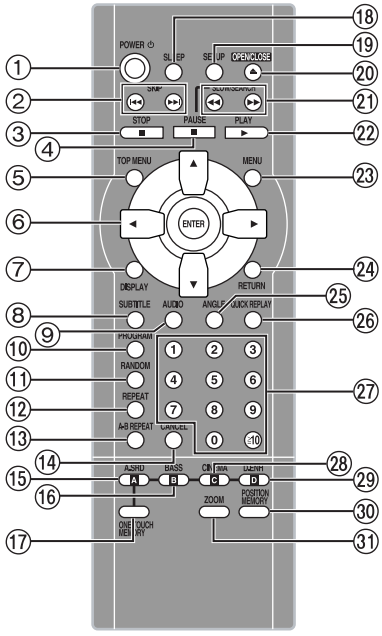
15.13. FRONT 1 AND FRONT 2 SCHEMATIC DIAGRAM

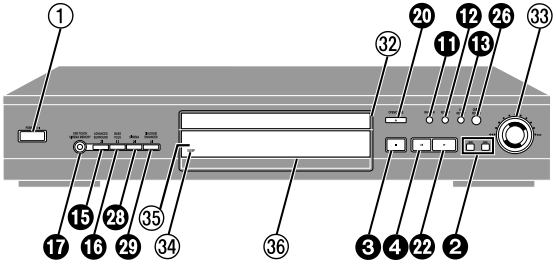




DVD-RV32P/PC
FRONT1,FRONT2
SCHEMATIC DIAGRAM

6 7 8 9 10





Buttons such as ❷ function the same as the controls on the remote control.
The actual marking of the standby/on switch depends on the area. Illustrations in these operating instructions use the markings shown in the above illustration.

① **Standby/on switch (⏻/I)**
Press to switch the unit from on to standby mode or vice versa. In standby mode, the unit is still consuming a small amount of power.

② **Skip buttons (⏮, ⏭ SKIP)**

③ **Stop button (■ STOP)**

④ **Pause button (❚❚ PAUSE)**

⑤ **Top menu button (TOP MENU)**

⑥ **Cursor buttons (▲, ▼, ◄, ►)/Enter button (ENTER)**

⑦ **Display button (DISPLAY)**

⑧ **Subtitle button (SUBTITLE)**

⑨ **Audio button (AUDIO)**

⑩ **Program button (PROGRAM)**

⑪ **Random play button (RANDOM)**

⑫ **Repeat button (REPEAT)**

⑬ **A-B repeat button (A-B REPEAT)**

⑭ **Cancel button (CANCEL)**

⑮ **Advanced Surround button (A A.SRD)**

⑯ **Bass plus button (B BASS)**

⑰ **One touch cinema memory button (ONE TOUCH MEMORY)**

⑱ **Sleep button (SLEEP)**

⑲ **Setup button (SETUP)**

⑳ **Open/Close button (⏏ OPEN/CLOSE)**

㉑ **Slow/Search buttons (◄◄, ►► SLOW/SEARCH)**

㉒ **Play button (► PLAY)**

㉓ **Menu button (MENU)**

㉔ **Return button (RETURN)**

㉕ **Angle button (ANGLE)**

㉖ **Quick replay button (QUICK REPLAY)**

㉗ **Numbered buttons (1–9, 0, ≧10)**

㉘ **Cinema button (C CINEMA)**

㉙ **Dialogue Enhancer button (D D.ENH)**

㉚ **Position memory button (POSITION MEMORY)**

㉛ **4:3 TV ZOOM button (ZOOM)**

㉜ **Disc tray**

㉝ **Shuttle dial (◄◄, ►►)**

㉞ **Sleep indicator (SLEEP)**

㉟ **Remote control signal sensor**

㊱ **Display**

Ref No.	IC2001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	1.3	3.3	0	1.6	1.6	3.3	1.6	3.3	1.6	-	1.6	0	0	-	-	0	0	3.3	0.3	3.3
PLAY	1.2	3.3	0	1.6	1.6	3.3	1.7	3.3	1.6	-	2.3	0	0	-	-	0	0	3.3	0.1	3.3
Ref No.	IC2001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
STOP	0	-	-	-	-	1.7	1.3	0	3.3	1.6	1.7	1.6	1.6	1.6	1.6	1.6	2.4	1.6	1.5	1.2
PLAY	3.3	-	-	-	-	2.1	1.3	0	3.3	1.6	1.7	2.0	2.2	1.6	0.9	1.6	2.1	1.6	1.5	1.3
Ref No.	IC2001																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
STOP	1.3	1.2	3.2	1.0	1.6	1.6	1.6	0.1	1.6	0.1	0	3.3	0.4	0.9	1.1	1.1	0.8	0.8	0.9	0.5
PLAY	1.3	1.3	3.2	1.0	1.6	1.7	1.7	0.4	1.6	0.6	0	3.3	1.1	1.0	0.9	1.3	1.0	1.3	0.9	0.9
Ref No.	IC2001																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
STOP	1.0	0.9	1.0	2.8	1.1	2.6	2.3	3.0	2.7	2.3	3.3	3.0	3.3	1.9	1.8	1.4	2.7	2.2	2.7	2.1
PLAY	1.1	1.3	1.2	2.4	1.5	2.6	1.7	2.5	2.5	1.6	3.1	2.6	3.2	2.0	1.8	1.2	2.0	1.9	2.2	1.5
Ref No.	IC2001																			
MODE	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
STOP	2.3	3.3	0	0	1.6	1.6	3.3	3.3	3.3	-	0	3.3	1.6	0	0	0	0	0	3.3	0
PLAY	1.7	3.2	0.2	0	1.6	1.6	3.3	3.3	3.3	-	0.2	0.8	1.6	0	2.0	1.8	1.8	0	3.3	1.9
Ref No.	IC2001																			
MODE	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
STOP	0	0	0	0	3.3	3.3	0	0	3.3	0	3.3	3.2	0	3.3	0	0	0	0.1	0	-
PLAY	1.7	1.7	1.7	1.8	3.3	3.3	0	0	3.3	0	2.4	2.3	1.0	2.3	1.0	1.1	1.1	1.2	1.1	-
Ref No.	IC2001																			
MODE	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140
STOP	-	-	3.3	3.3	0	3.3	0	0	3.3	0	0	0	0	0	0	0	0	0	0	0
PLAY	-	-	2.7	2.9	0.6	2.9	0.8	0.9	3.3	0	0.9	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Ref No.	IC2001																			
MODE	141	142	143	144																
STOP	0	0	0	0																
PLAY	0.8	0.8	0.8	0.8																
Ref No.	IC2061																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	3.3	0	0	0	0	3.3	0	0	0	0			-	-	0	3.3	-	0.1	0.1	3.3
PLAY	3.3	0.9	0.8	0.7	0.7	3.3	0.7	0.7	0.7	0			-	-	0	2.6	-	1.2	1.2	2.2
Ref No.	IC2061																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
STOP	3.2	3.3	0	3.3	0	0	0	0	0	3.3	3.3	-			0	0	0	0	0	0
PLAY	2.2	3.3	0	2.4	0.9	1.0	1.1	1.1	0	2.9	2.9	-			0.8	0.9	0.9	0.8	0	0.8
Ref No.	IC2061																			
MODE	41	42	43	44																
STOP	0	0	0	0																
PLAY	0.8	0.8	0.8	0																
Ref No.	IC3001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	3.3	0	1.1	0	0	1.1	0	1.0	3.3	1.2	3.3	3.3	3.3	1.9	0	0	0	0	0	0
PLAY	3.3	0.1	1.5	0.1	0	1.5	0.2	1.3	3.3	1.5	3.3	3.3	3.3	1.8	0	0	0	0	0	0
Ref No.	IC3001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
STOP	0	0	0	0	0	0	3.3	3.3	0	3.3	3.0	3.3	1.5	3.3	2.7	3.0	2.3	2.6	1.9	1.1
PLAY	0	0	0	0	0	0	3.2	3.3	0	3.2	2.5	3.3	1.5	3.3	2.5	2.5	1.6	2.5	1.8	1.5
Ref No.	IC3001																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
STOP	2.8	1.0	0.9	0	1.0	0.5	0.9	3.3	2.3	2.1	2.7	0	3.3	2.1	2.6	1.4	1.8	0	1.8	2.0
PLAY	2.4	1.2	1.2	0	1.1	0.9	0.9	3.3	1.7	1.5	2.2	0	3.3	2.0	2.2	1.8	2.4	0	2.3	1.9
Ref No.	IC3001																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
STOP	1.3	1.3	1.9	1.0	3.0	1.0	1.4	0	2.5	0	1.5	3.3	3.3	3.3	3.3	0	3.3	0	1.9	0
PLAY	1.4	1.5	1.8	1.2	2.7	1.4	1.5	0	2.7	0.3	1.5	1.0	3.3	3.3	2.0	1.7	1.8	1.7	1.8	1.9
Ref No.	IC3001																			
MODE	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
STOP	3.3	0	3.3	0	1.6	0	1.9	1.5	1.7	1.6	3.3	0	0	0	0	0	0	3.3	1.5	3.3
PLAY	1.8	2.0	1.8	0	1.7	1.2	1.8	1.5	1.7	1.6	3.3	0	0	0	0	0	0	3.3	1.5	3.3
Ref No.	IC3001																			
MODE	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
STOP	0.9	0	0.5	1.9	1.9	0	0	1.9	2.2	1.6	3.3	3.3	1.4	0	0	0.9	0.9	2.3	0.6	3.3
PLAY	0.2	0	0	1.8	1.8	0	0	1.8	3.3	1.6	3.3	0.9	2.3	0	0	0.6	0.6	2.3	0.4	0
Ref No.	IC3001																			
MODE	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140
STOP	0.6	0.6	2.3	0.4	0	0.6	0.6	2.3	0.4	3.3	1.3	1.3	2.1	0.4	0	-	0	0	0	0
PLAY	0.6	0.6	2.3	0.4	0	0.6	0.6	2.3	0.4	3.3	1.3	1.3	2.1	0.6	0	-	0	0	0	0
Ref No.	IC3001																			
MODE	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160
STOP	0	-	3.3	3.1	0	1.9	0.9	0.5	0.5	0.5	0	3.2	0.1	0	0	3.3	0	3.1	3.0	3.3
PLAY	0	-	3.3	3.1	0	1.8	1.2	1.2	1.2	1.2	0	2.1	1.2	2.1	0.5	3.3	0	2.2	2.6	3.3
Ref No.	IC3001																			
MODE	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180
STOP	2.8	2.9	0	2.9	2.9	3.3	3.1	3.0	0	2.9	3.2	3.3	2.9	1.9	2.9	0	2.9	2.9	3.3	3.1
PLAY	3.0	2.6	0	2.8	2.5	3.3	2.7	2.6	0	2.5	2.5	3.3	2.6	1.8	2.5	0	2.6	2.8	3.3	2.6
Ref No.	IC3001																			
MODE	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200
STOP	3.0	0	1.7	3.3	1.7	0	3.3	1.9	2.8	3.3	3.3	2.8	3.3	0	3.2	3.2	3.3	3.3	3.1	0
PLAY	2.4	0	1.7	3.3	1.7	0	3.3	1.8	2.0	3.3	3.3	2.0	3.2	0	3.1	3.1	3.3	3.3	3.1	0

Ref No.	IC3001																			
MODE	201	202	203	204	205	206	207	208												
STOP	0.1	1.9	1.2	0	3.3	0	1.0	0												
PLAY	0	1.8	1.4	0	3.3	0	1.2	0												
Ref No.	IC3061																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	3.3	3.0	2.9	0	2.9	3.0	3.3	3.2	2.9	0	2.9	3.0	3.3	2.8	3.2	3.2	3.2	3.1	1.2	0
PLAY	3.3	2.6	2.6	0	2.6	2.5	3.3	2.6	2.6	0	2.6	2.7	3.3	2.1	3.2	3.1	3.1	2.9	1.4	0
Ref No.	IC3061																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
STOP	0	0	0	1.2	3.3	0	1.0	1.1	1.1	1.0	0	0	-	3.3	1.7	2.8	-	3.3	3.0	2.9
PLAY	0.1	0.1	0.1	1.0	3.3	0	1.2	1.5	1.5	1.2	0	0	-	3.3	1.7	2.1	-	3.3	2.6	2.6
Ref No.	IC3061																			
MODE	41	42	43	44	45	46	47	48	49	50										
STOP	0	3.0	3.0	3.0	3.1	2.9	0	2.9	3.1	0										
PLAY	0	2.6	2.7	3.3	2.6	2.7	0	2.7	2.5	0										
Ref No.	IC4001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	0	0	0	3.3	0.9	0	0.8	0.8	1.1	1.2	0.9	1.6	3.3	0	0	1.6	3.3	3.2	3.3	3.3
PLAY	0	0	0	3.3	0.9	0	1.3	0.9	1.4	0.8	1.1	1.6	3.3	0	0	1.6	3.3	3.2	3.3	3.3
Ref No.	IC4001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
STOP	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	0	3.3	0	0.6	0	0	3.3	0.1	0
PLAY	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	0	3.3	0	0.4	0	0	3.3	0.1	0
Ref No.	IC4001																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
STOP	0.1	0	0.1	0	0.1	0.1	0	0.1	1.6	0	0	1.6	0.1	1.7	3.3	3.3	0	0	0.1	3.3
PLAY	0.1	1.8	0.1	1.7	0.1	0.1	1.8	0.1	1.6	0	0	1.6	0.1	1.7	3.3	3.3	0	0	0.1	3.3
Ref No.	IC4001																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
STOP	3.1	3.3	3.3	3.3	3.3	0	3.3	1.6	0	0	1.7	0	0	0.1	3.3	0	0	3.3	0	3.3
PLAY	3.1	3.3	3.3	3.3	3.3	0	3.3	1.6	0	0	1.7	0	0	0.1	3.3	0	0	3.3	0	3.3
Ref No.	IC4001																			
MODE	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
STOP	0	-	3.3	3.3	0.6	3.3	0	3.3	3.3	0	1.6	3.3	0	1.6	0	-	1.5	3.3	2.3	2.1
PLAY	0	-	3.3	3.3	0.5	3.3	0	3.3	3.3	0	1.6	3.3	0	1.4	0	-	1.5	3.3	1.8	1.5
Ref No.	IC4001																			
MODE	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
STOP	2.7	2.2	2.7	1.4	0.4	0	0	0	0	0	0	3.3	1.8	3.3	3.3	3.3	3.3	3.3	3.3	0
PLAY	2.2	1.9	2.0	1.2	1.2	0	0	0	0	0	0	3.3	1.8	2.0	1.9	1.3	1.3	1.1	2.3	0
Ref No.	IC4001																			
MODE	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140
STOP	0.5	0.6	0.5	0	1.6	0	3.3	0	3.3	3.3	2.7	3.0	2.4	2.6	0	1.1	2.8	1.3	1.1	1.2
PLAY	0.3	0.4	0.4	0	1.6	0	2.3	0	3.3	3.3	2.8	2.5	2.3	2.4	0	1.5	2.4	1.2	1.2	1.1
Ref No.	IC4001					IC4021														
MODE	141	142	143	144		1	2	3	4	5										
STOP	0.8	1.6	0	0		3.3	0	3.3	1.3	1.6										
PLAY	0.9	1.6	0	0		3.3	0	3.3	1.3	1.6										
Ref No.	IC4031																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
STOP	0	1.6	1.7	1.7	1.7	3.3	0	0	1.7	1.7	1.7	1.6	1.6	1.6	0	3.3				
PLAY	0	1.6	1.7	1.7	0.8	3.3	0.8	0	1.7	1.7	1.7	1.6	1.6	1.6	0	3.3				
Ref No.	IC4041						IC4051						IC4061							
MODE	1	2	3	4	5		1	2	3	4	5		1	2	3	4	5	6	7	8
STOP	3.3	3.3	0	3.3	3.3		3.0	3.3	0	3.0	3.3		1.5	3.0	0.3	0	3.0	3.3	3.3	3.3
PLAY	3.3	3.3	0	3.3	3.3		2.5	3.2	0	2.8	3.3		1.5	2.5	1.0	0	2.3	3.3	3.3	3.3
Ref No.	IC4201																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
STOP	1.6	0	1.7	0	3.3	5.1	2.5	2.5	0	2.5	0	0	3.3	2.8	3.3	1.6				
PLAY	1.6	0.8	1.7	0	3.3	5.0	2.5	2.5	0	2.5	3.3	0	3.3	2.8	3.3	1.6				
Ref No.	IC6201																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	0	3.0	3.3	3.3	3.3	3.3	3.3	3.0	3.3	0	3.3	3.3	2.4	2.7	3.0	2.3	3.3	1.4	0	0
PLAY	0	2.5	2.5	3.2	3.3	3.0	3.2	2.6	3.3	0	3.3	3.3	1.7	2.5	2.5	2.3	3.3	1.3	0	0
Ref No.	IC6201																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
STOP	-	3.3	1.6	-	3.3	2.6	1.1	2.8	1.0	0.9	1.0	1.2	0.9	3.3	1.2	1.2	1.2	1.2	1.2	1.2
PLAY	-	3.3	1.6	-	3.3	2.4	1.5	2.4	1.2	1.2	1.1	0.9	0.9	3.3	1.3	1.0	1.4	0.9	1.1	1.1
Ref No.	IC6201																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
STOP	1.2	1.8	0	3.3	3.3	3.3	3.3	3.3	1.7	3.3	1.1	2.8	3.3	3.3	0	3.3	3.3	0	0	3.3
PLAY	1.9	1.5	0	3.3	3.3	3.3	3.3	3.3	1.7	3.0	1.1	2.8	3.3	3.3	0	3.3	3.3	0	0	3.3
Ref No.	IC6201																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
STOP	0	0	3.3	3.3	3.3	3.3	3.3	3.3	3.3	2.8	3.3	3.3	3.3	3.3	3.3	0.2	3.3	0	0	3.3
PLAY	0	0	3.3	0	3.3	3.3	3.3	3.3	0.1	2.8	3.3	3.3	3.3	3.3	3.3	0.1	3.2	3.2	0	3.3
Ref No.	IC6201																			
MODE	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
STOP	3.3	3.3	3.3	2.3	2.1	2.7	2.2	2.6	1.4	1.8	1.9	0	2.0	1.3	1.3	1.0	3.0	1.0	1.4	2.5
PLAY	3.3	3.3	3.3	1.7	1.6	2.2	2.1	2.0	1.2	1.8	2.0	0	2.0	1.3	1.4	1.1	2.3	1.4	1.5	2.1
Ref No.	IC6251						IC6301													
MODE	1	2	3	4	5		1	2	3	4	5									
STOP	5.1	5.1	3.3	-	0		0	0	0	3.3	3.3									
PLAY	5.1	5.1	3.3	-	0		0	0	0	3.3	3.3									
Ref No.	IC6302																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	0.9	1.2	1.1	0.8	0.8	0.9	0.5	1.0	-	-	3.3	3.3	-	-	-	2.4	2.7	0.9	1.0	2.7
PLAY	1.1	0.8	1.4	0.9	1.3	0.9	0.9	1.0	-	-	3.2	3.3	-	-	-	1.5	1.9	1.2	1.2	2.4
Ref No.	IC6302																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
STOP	1.1	2.6	2.3	3.0	2.7	3.0	0	3.0	2.3	2.0	2.1	1.3	2.7	1.3	2.2	1.0	3.3	2.7	3.0	1.4
PLAY	1.5	2.4	1.7	2.5	2.5	2.6	0	2.5	1.7	1.8	1.6	1.3	2.2	1.4	1.9	1.1	3.3	2.0	2.4	1.2

Ref No.	IC6302									IC6303										
MODE	41	42	43	44	45	46	47	48		1	2	3	4	5	6	7	8			
STOP	1.1	1.8	1.4	1.9	2.5	0	3.2	0.4		0	0	0	0	3.3	3.3	0	3.3			
PLAY	1.3	1.8	1.5	1.9	2.6	0	3.3	1.2		0	0	0	0	3.3	3.3	0	3.3			

Ref No.	IC6501																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
STOP	3.3	0	1.6	1.4	3.3	0	1.5	1.6	-	1.6	0	3.3	1.5	3.3	1.5	3.3				
PLAY	3.3	0	1.6	1.4	3.3	0	1.5	1.6	-	1.6	0	3.3	1.5	3.3	1.4	3.3				

Ref No.	QR6301		
MODE	E	C	B
STOP	0	3.3	0
PLAY	0	3.3	0

Ref No.	IC1101				IC1151																
MODE	K	R	A		1	2	3	4	5												
STOP	51.7	49.7	52.5		58.0	52.3	57.3	-	0												
PLAY	51.2	49.6	52.4		58.0	52.4	57.3	-	0												

Ref No.	IC3501																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	2.1	5.0	2.8	0	2.4	5.1	0	0	0	0.3	5.1	2.7	0	2.7	5.1	0.6	2.2	2.0	2.2	0
PLAY	2.1	4.9	2.8	0	2.7	5.0	0	2.3	0	2.2	5.0	2.7	0	2.7	5.0	2.2	2.2	2.0	2.2	0

Ref No.	IC3501																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32								
STOP	0.9	1.0	0	1.6	1.6	0	1.8	0	1.6	1.6	0	2.3								
PLAY	0.4	0.4	0	2.1	2.1	0	2.0	0	2.0	2.1	0	2.3								

Ref No.	IC4311									IC4381										
MODE	1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8			
STOP	0	0	0	-9.7	0	0	0	9.8		0	0	0	-9.7	0	0	0	9.8			
PLAY	0	0	0	-9.7	0	0	0	9.8		0	0	0	-9.7	0	0	0	9.8			

Ref No.	IC6001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	3.3	3.3	3.3	1.1	2.8	3.0	3.3	3.3	1.5	1.6	0	0	3.3	0	0	3.3	3.3	3.3	3.3	3.3
PLAY	3.3	3.3	3.3	1.1	2.7	3.0	3.3	3.3	1.5	-	0	0	3.3	0	0	3.3	3.3	3.3	3.3	3.3

Ref No.	IC6001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
STOP	0	0.3	0.7	3.3	0	3.3	1.6	1.6	3.2	3.3	3.3	3.3	2.9	3.3	3.1	3.3	3.2	3.3	0	3.2
PLAY	0	0.3	0.7	3.3	0	3.3	1.6	1.6	3.2	3.3	3.2	3.3	3.2	3.3	3.3	3.3	3.3	3.3	0	3.2

Ref No.	IC6001																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
STOP	0	3.2	3.2	3.2	3.2	3.3	3.2	3.3	3.3	3.0	-28.5	-28.5	-28.5	-28.5	-28.3	-28.3	-28.3	-28.3	-28.3	-28.3
PLAY	0	3.3	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.0	-28.7	-28.7	-28.7	-28.7	-28.5	-28.5	-28.5	-28.5	-28.5	-28.5

Ref No.	IC6001																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
STOP	-28.3	-28.3	-28.4	-12.6	-30.6	-30.6	-25.5	-30.6	-28.0	-30.6	-25.4	-25.4	-25.8	-25.8	-23.2	-23.2	-30.8	-28.3	-30.8	-18.0
PLAY	-28.5	-28.5	-28.6	-12.7	-25.7	-25.6	-15.2	-30.8	-30.8	-30.8	-15.1	-15.1	-26.0	-26.0	-23.2	-10.3	-28.5	-28.5	-31.0	-15.0

Ref No.	IC6001																			
MODE	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
STOP	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	-	-	3.3	3.3	3.3	3.2	3.2	-30.9
PLAY	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	-	-	3.3	3.3	3.3	3.2	3.2	-31.1

Ref No.	IC6011																			
MODE	1	2	3																	
STOP	3.3	0	3.3																	
PLAY	3.3	0	3.3																	

Ref No.	Q1021				Q1051					Q1052				Q1115						
MODE	1	2	3		1	2	3	4		E	C	B		1	2	3	4	5	6	
STOP	0	290.6	-0.2		54.4	53.3	1.0	11.4		0	-0.2	0.1		54.1	54.2	49.8	54.2	54.2	54.3	
PLAY	0	251.6	-0.2		54.2	53.1	0.9	11.8		0	-0.2	0.1		53.8	54.3	49.6	54.2	54.0	54.0	

Ref No.	Q1125				Q1126						Q1141				Q4392					
MODE	E	C	B		1	2	3	4	5		E	C	B		E	C	B			
STOP	53.0	51.2	52.4		52.5	51.2	51.4	50.9	51.2		41.4	23.2	40.6		0	0	0			
PLAY	52.9	51.4	52.3		52.4	51.4	51.3	50.7	51.2		41.4	22.9	40.7		0	2.8	0			

Ref No.	Q4411				Q4415				Q4421				Q4425				Q4481			
MODE	E	C	B		E	C	B		E	C	B		E	C	B		E	C	B	
STOP	0	0	0.7		0	0	0.7		0	0	0.7		0	0	0.7		0	0	0.7	
PLAY	0	0	-4.6		0	0	-4.6		0	0	0		0	0	-4.6		0	0	0	

Ref No.	Q4482				Q4483				Q6091				Q6095							
MODE	E	C	B		E	C	B		E	C	B		E	C	B					
STOP	0	0	0.7		0	0	0.7		0	0	0		-23.7	-23.7	-23.0					
PLAY	0	0	0		0	0	0		0	0	0		0	0	0					

Ref No.	QR1115				QR3521				QR4391				QR4393				QR4394			
MODE	E	C	B		E	C	B		E	C	B		E	C	B		E	C	B	
STOP	0	49.7	52.3		0	0	3.2		0	0	0		0	0	0		0	0	0	
PLAY	0	49.6	52.3		0	0	3.2		0	2.8	0		0	0	2.8		0	-4.6	0	

Ref No.	QR6053				QR6054															
MODE	E	C	B		E	C	B													
STOP	3.3	-	3.3		3.3	-	3.3													
PLAY	3.3	-	3.3		3.3	-	3.3													

Ref No.	IC6101																			
MODE	1	2	3	4	5															
STOP	3.3	3.3	0	0	0															
PLAY	3.3	3.3	0	0	0															

Ref No.	IC2501																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	1.6	1.6	1.6	2.0	2.0	1.6	0	5.0	0	0	2.9	2.9	2.9	2.9	4.3	4.3	3.8	3.8	0	3.2
PLAY	1.6	1.6	1.6	1.4	2.3	0	0	5.0	3.3	0	2.9	2.9	2.9	2.9	4.3	4.3	5.9	2.5	0	3.2

Ref No.	IC2501																			
MODE	21	22	23	24	25	26	27	28												
STOP	9.0	9.0	1.8	1.6	1.6	1.6	0	3.2												
PLAY	9.0	9.0	1.8	1.6	1.6	1.6	3.3	3.2												

Ref No.	IC5201																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	0	0	4.6	0	4.6	1.6	1.6	1.7	3.3	2.7	3.3	1.8	1.6	0	3.3	0	3.3	0.5	0	1.6
PLAY	0	0.5	3.3	0	4.6	1.6	1.6	1.4	3.3	2.7	3.3	1.8	1.6	0	0	0	3.3	0.5	0	1.6

Ref No.	IC5201																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
STOP	1.6	1.6	1.6	1.6	3.3	1.8	1.8	1.0	1.7	0.6	0	2.2	2.2	0	1.6	1.6	5.0	2.2	2.2	2.3
PLAY	2.1	1.6	1.6	1.6	3.3	1.8	1.8	1.0	1.7	1.4	0	2.2	2.2	0.6	2.0	0.9	5.0	2.2	2.2	2.3

Ref No.	IC5201																			
MODE	41	42	43	44	45	46	47	48												
STOP	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2												
PLAY	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2												

Ref No.	Q5211				Q5215				QR5251											
MODE	E	C	B		E	C	B		E	C	B									
STOP	5.0	2.2	4.6		5.0	1.2	4.6		3.3	0.1	3.3									
PLAY	4.0	0.9	3.3		5.0	1.2	4.6		3.3	3.3	0.1									